

## Oakland Group Hits 'Special' Offers

(Concluded from Page 1, Column 4) regardless of age or condition," and a statement that "we also take your old stove in at a 'surprise' allowance." The advertisement originally appeared in newspapers, and copies have since been distributed as broadsides to Oakland residents.

Also stated in the advertisement is that the store is "open until 10 p.m. daily and all day Sunday," and that no information will be given over the telephone concerning this sale. Admission coupon included in the advertisement stipulates that it must be presented at the door by both husband and wife.

Regarding the combination offers on vacuum cleaners made by General Electric and Westinghouse, the association has asked the companies to withdraw the offers in its territory, and has advised merchants to refuse to handle the combinations.

According to the association's bulletin, "Westinghouse has a Crisco coupon that you get from a grocery store, and General Electric has a sprayer and some moth eradicator.

"The imagination of the promotion managers of manufacturers appears to be working overtime in devising methods to stimulate trade without doing the obvious thing, which is to cut the price of their merchandise," the bulletin continues.

"Westinghouse is offering a roaster with their Westinghouse washer or ironer, and we are asking them to withdraw that offer."

These combinations, the bulletin asserts, "will only lead to bigger and better combinations, and if continued long enough would wind up with an offer to completely outfit a kitchen with the purchase of an electric toaster."

### Department Store To Test Trade-In Plan

(Concluded from Page 1, Column 4) in relation to a predetermined sales volume, so that any marginal loss through allowances must be made up by increased business.

Also, it was learned, the store will neither recondition nor retail the used refrigerators, but will sell them to certain unnamed outlets.

The store's salesmen will make preliminary appraisals, subject to final approval and confirmation by a supervising appraiser.

Offer of trade-ins on used equipment applies only to mechanical refrigerators, it was said. Ice boxes are not covered in the arrangement.

## TAILOR MADE FOR PERFECT REFRIGERATION



**The ANSUL Twins**  
ANSUL CHEMICAL COMPANY  
MARINETTE » » » » WISCONSIN

## Develop New Industries, Particularly Air Conditioning, Babson Urges

(Concluded from Page 1, Column 3) haps druggists, out of jobs. I have in mind the fact that air conditioning greatly improves the health and efficiency of workers in factories, stores, and homes. Remember that air conditioning is much more than merely cooling your rooms. It means drying the air in summer, and moistening it in winter. There are only three things in life, viz: How we think, how we feel, and how we love. Certainly, air conditioning can become a great factor in the first two of these and perhaps an influence in the third!

### WHAT ABOUT THE POWER ROW?

We see much in the papers today about the row in Congress over the T.V.A. I feel that the Administration has been unfair to the public utilities. They do not deserve the persecution which they have had. On the other hand, if all parties would stop scrapping and unitedly get behind air conditioning, the whole problem would solve itself. Due to the demands for power from air conditioning, there will be a shortage of generating capacity even after the new big Government dams are in full operation. Some day, when air conditioning is universally used, the utilities will thank President Roosevelt for his foresight in providing this additional electric power.

Next week I expect to spend in Washington. While there, I shall visit the White House offices, the Senate, and the House of Representatives; also the offices of some of your Congressmen. I expect to find all these offices air conditioned. Why should these political leaders deny the people something which they themselves consider indispensable? They should pass along this great improvement to others.

### WHAT ABOUT RELIEF?

The Roosevelt Administration has gone into debt 20 billion dollars in trying to beat depression. I do not object so much to the money involved. The great harm has been

**PENN Leads in AUTOMATIC SWITCHES AND CONTROLS**  
Write for Catalog  
**PENN ELECTRIC SWITCH CO.**  
GOSHEN, INDIANA

the undermining of character. I often wonder whether, if our Great Western country were unsettled today, our young men and women would have the guts to go out and build the railroads, hew the forests, start the farms, and do the other things which our grandparents did 75 years ago.

But let us not cry over spilt milk. Let us blame no one, not even the President, for anything that has been done up to date. From now on, however, let us devote our energies to developing new industries. If possible, let us select industries like air conditioning which will not compete with existing industries. In this way, relief can steadily be cut down, self-respect will be restored, and the country can enter a real period of prosperity and growth.

## Electrical Show Revived By Pittsburgh Dealers

(Concluded from Page 1, Column 5) the benefits of automatic water cups, ultra-violet sun lamps, and radio music during the milking period.

Milking will be done electrically, and the milk will be electrically cooled and processed as a demonstration for visitors. Modern milk room equipment will include coolers, churn, cream separator, water heater, and an automatically heat-controlled dairy utensil sterilizer. Other electrical farm appliances will be displayed.

## Frostkist Has Unit In Household Field

LOS ANGELES—Moore Electric Supply Co., sales division of Parker-Frostkist Co. here, has introduced the "Moore" household electric refrigerator for distribution in California. The new unit marks the entry of Parker-Frostkist into the household refrigeration field, after 40 years' experience in the commercial refrigeration industry.

H. E. Sherman is sales manager for the new refrigerator, and C. J. Nystrom is sales promotion manager. Chief engineer is Herbert C. Parker.

The refrigerator has a Westinghouse motor with special Thermoguard, a basic Westinghouse patent. Evaporator is oversize, said to be approximately 12½% larger than the average, and is of copper which is said to operate at higher temperature than other metals.

Also incorporated is an "air-conditioning" feature, which is claimed to reduce the moisture loss of foods. Tenite is used on the front of the

ice compartment, for shelf pins, and for handles. A "slow-speed" compressor is used, which is said to give economical operation with a minimum of wear.

Other features include a three-adjustment meat tray under the evaporator, and other adjustable and removable shelves. A special "hostess tray" on the inside refrigerator door is removable for service.

## West Virginia Dealers Plan Electrical Week

BLUEFIELD, W. Va.—Plans for a campaign to sell more appliances during Electrical Week, to be held here June 6 to 11, were discussed at a meeting of 135 dealers from all parts of McDowell county here.

Committee named to handle arrangements for the drive includes: Paul W. Jones, Jones-Cornett Electric Co., Welch, W. Va.; L. W. Coffey, Kimball Light & Water Co., Kimball, W. Va.; C. C. Campbell, Superior-Sterling Co., Bluefield; W. A. Douglass, Bluefield Supply Co., Bluefield; and Charles A. Southern, Appalachian Electric Power Co., Welch.

## TOMORROW'S REFRIGERATION TODAY

Our complete line not only meets present needs but is



Write for information covering the GR-Lipman refrigeration franchise.

**GENERAL REFRIGERATION CORPORATION**

Dept. F-5, Beloit, Wisconsin, U.S.A.

**Increasing demands**

Williams AND Company Inc. CINCINNATI  
CLEVELAND PITTSBURGH  
ELECTRICAL ENGINEERING, BOILER TUBES,  
PIPE, TUBING, AIR-CONDITIONING EQUIPMENT,  
REFRIGERATION, AIR-CONDITIONING, WELDING MACHINES

March 15, 1938

Automatic Products Company  
2450 North 32nd Street  
Milwaukee, Wisconsin  
Attention: Mr. E. A. Vallee  
Dear Mr. Vallee: We are glad to tell you that A-P  
customers of every one of our three branches. This  
has meant a very fine volume of business since we  
started to handle your line several years ago.  
We might also mention that we expect  
this volume to show a considerable increase in  
1938 over past years.

Very truly yours,  
H. S. McCloud  
MOR. REFRIGERATION DEPT.

H. S. McCloud  
MOR. REFRIGERATION DEPT.

P.S. -- We have greatly enjoyed our business  
in that past, and trust that future relations  
may continue just as pleasant for many years

**Williams and Company, Inc.**  
General Office and Warehouse Pittsburgh, Pa.

**Williams and Company, Inc.**  
Branch Cleveland, Ohio

**Williams and Company, Inc.**  
Branch Cincinnati, Ohio

**Williams and Company, Inc.**  
Branch Milwaukee, Wisconsin

## Go to Your Jobber for A-P Valves.

"Increasing Demand" for any product used in Air Conditioning and Refrigeration must be built solely upon PERFORMANCE. In A-P Thermostatic Expansion Valves and Solenoids this performance is demonstrated in leakproof, accurate, supersensitive control of refrigerants.

Refrigeration Service Engineers also prefer A-P Valves because they are easy to install, easy to inspect and clean, and can always be depended upon for service-free operation on every job. This means always a satisfied customer, building a reputation for quality work for the installing engineer.

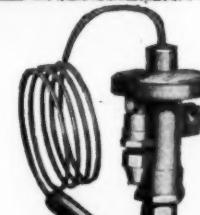
• **AUTOMATIC PRODUCTS COMPANY**  
2450 NORTH THIRTY - SECOND STREET  
MILWAUKEE WISCONSIN



No. 205 Expansion Valve



No. 73RB Solenoid



No. 210 Expansion Valve

**DEPENDABLE**

THE BYWORD FOR A-P VALVES

# Air Conditioning & Refrigeration News

The Newspaper of the Industry

First Copy

PUBLIC LIBRARY

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## THE COLD CANVASS

By B. T. Umor

### The 'Substitute's' Revenge: Or Caught In the Act

The trouble with getting to be a "radio personality" on a couple of unrelated programs seems to be that you can't always keep your stories straight and at the same time be a good "guest."

One of the latest to fall victim to this double-program trouble is Mrs. Ida Gorrington, the "lady iceman" of Long Ridge, Conn.

Just last week, on Eleanor Howe's "Homemakers' Exchange" program, an ice industry-sponsored broadcast, Mrs. Gorrington told her interviewer that "more people are coming back to using ice every day. We have a lot of prominent people, like Deems Taylor, Heywood Broun, Gene Tunney. People like that can have most anything they want."

But when she was introduced as one of the "People You Didn't Expect to Meet" on a recent Fred Allen "Town Hall Tonight" broadcast, the "lady iceman" said, when asked how Heywood Broun was getting along: "I don't know—he bought an electric refrigerator and I don't deliver ice to his house any more."

Tch, tch, Mrs. Gorrington—you ought to be able to remember the names of your famous customers, at least from one program to another. Or maybe long-memoried birds like old B. T. U. aren't supposed to horn in on a huddle of homemakers.

\* \* \*

### Lipstick Sticks 'Em

The head of the Department of Health in Jacksonville, Fla., endorses lipstick as a preventive of disease. Says he:

"The stuff sticks to glasses used by soda fountains, restaurants, and hotels making thorough washing of the glasses necessary to avoid complaints of customers." (Note: See editorial on page 10.)

\* \* \*

### And He Doesn't Spend A Nickel With Us

In and around New York, we hear, it is the vogue to yip at Henry Ford and all his works. Said one Manhattanite recently: "Is it possible that you, a Detroiter, are in favor of Ford?"

Just in case anybody wants to know, Mr. Ford is just about the most highly respected citizen of this community. For example, last week many old-time Detroiters gathered to honor Mr. and Mrs. Ford on their fiftieth wedding anniversary. Said the Detroit Free Press:

"The long and useful life of Mr. Ford has been identified with this City from the beginning. And it is no mean boast for any city to claim a man who has done so much for it and for his country, as has this far-seeing industrialist, who has not only made the name of Detroit known in every corner of the world, but has also provided work for millions of Americans."

A movement is now underway to give official and impressive expression to Detroit's appreciation of Mr. (Concluded on Page 9, Column 1)

### Fassnacht Represents Pelco In New York Territory

BLOOMINGTON, Ill.—Richard C. Fassnacht has been appointed district manager in the metropolitan New York area for the refrigeration division of Portable Elevator Mfg. Co., E. W. Jones, sales manager of the division, announced.

Mr. Fassnacht will promote Pelco electric beverage and beverage-food (Concluded on Page 2, Column 5)

### Air Conditioning's Progress Reviewed At Iowa Meeting

AMES, Iowa—Despite the worst April blizzard in years, approximately 200 air-conditioning engineers and dealers, and representatives of allied trades turned out for the Third Heating and Air Conditioning Conference held here April 6 to 8, under the auspices of the Engineering Extension Service of Iowa State College and the Iowa-Nebraska Chapter, American Society of Heating and Ventilating Engineers.

Thirty-one distributors and dealers provided displays in Engineering Exhibit Hall. The show was opened to the public the night of the second day.

Tracy R. Johnson, manager, Des Moines branch, The Trane Co., traced the history of man's attempt at air conditioning from early times through developments of the past 20 years.

Before perfection of the non-ferrous convector, little was known nor was any appreciable attention paid to cooling, Johnson said. But the non-ferrous convector was found to contain a big essential for air cooling, and it opened a wide field of experimentation which brought invention of the extended surface coil, today considered the "heart" of air-conditioning equipment. Extending his discussion, the speaker likewise traced the history of the evaporative condenser which now can be effectively used in all refrigerant systems.

"Today we are just scratching the surface of the many uses of air conditioning in the hospital treatment of diseases," he said. "The first use of air conditioning in the hospital occurred in nurseries and delivery rooms. A baby upon being born immediately begins to lose heat. If that loss of heat is not prevented, death is imminent. Dehydrator also begins immediately upon birth. If the air surrounding the newborn infant is not properly humidified, serious results follow. . . .

"Air conditioning, too, plays an (Concluded on Page 16, Column 1)

### ACMA-Member Sales Are \$4,428,469 In February

WASHINGTON, D. C.—Installed cost of equipment sold by members of Air Conditioning Manufacturers Association during February totaled \$4,428,469, an increase of 70.5% over January's \$2,597,217, but a decrease of 39.82% compared with \$7,360,000 reported for February, 1937, reports William B. Henderson, executive vice president.

### Code Readied To Better Capital's Air Conditions

#### Health Officer Moves To Assure Right Kind Of Air Conditioning

WASHINGTON, D. C.—New, specific standards on cooling, heating, and ventilating in the District of Columbia have been prepared by an advisory committee composed of experts in air conditioning, heating, and ventilating appointed by the department of health.

The standards are designed to safeguard the comfort and health of the occupants of public and commercial buildings in the capital city, one of the most thoroughly air-conditioned communities in the country. Temperature requirements, based (Concluded on Page 9, Column 4)

### Riley Engineering Opens Own Plant

DETROIT—Riley Engineering Corp. has opened a factory and offices at 100 E. Atwater St. here, to engage in the immediate manufacture of an advanced type oil separator ranging in capacities from  $\frac{1}{4}$  hp. to 50 tons. Frank B. Riley is president of the company, and O. F. Nelson is chief engineer.

As rapidly as facilities for quality production can be organized, the company also plans to manufacture a line of high side floats, automatic and thermostatic expansion valves, constant pressure valves, and water valves, Mr. Riley said.

(Concluded on Page 13, Column 4)

### Radiant Heat Commercial Uses To Be Studied

NEW YORK CITY—A coordinated study of the effects of radiant heat on human comfort and its economic value as compared to convected heat will be undertaken by a new technical advisory committee set up by American Society of Heating & Ventilating Engineers.

The committee, headed by J. C. Fitts, executive secretary of the Heating & Piping Contractors' Association, will assemble and coordinate (Concluded on Page 13, Column 5)

### 'Love 'Em and Leave 'Em' Policy On Part Of Distributors Hurts Industry, Says R. Cooper

By George F. Taubeneck

CHICAGO—"Love 'em and leave 'em." This policy on the part of manufacturers and distributors is responsible for much of today's disorganized refrigerator selling and price cutting, insists R. Cooper Jr., Chicago General Electric appliance distributor.

The "carload lot boys" may be greeted effusively down at the factory headquarters, but they aren't as well thought of out in the field, observes the canny Cooper.

Customary procedure of many a field man, he observes, is to sell a dealer or a group of dealers, a carload of refrigerators . . . then go off and forget 'em.'

It's Cooper's notion that you should never forget a refrigerator after you sell it to a dealer, nor even after he sells it to a customer. In his territory every G-E refrigerator sold is accounted for and ticketed.

Follow-through is complete for the lifetime of the refrigerator, for Cooper handles all service. Operating (Concluded on Page 5, Column 3)

### Forbes & Newcum Head New Firm Making Fittings

PITTSBURGH, Pa.—Announcement was made here last week of the formation of Superior Valve & Fittings Co., which will manufacture a line of diaphragm packless valves, flare fittings, and refrigeration accessories. J. S. Forbes, formerly treasurer of the Kerotest Mfg. Co., was the prime factor in the formation of the new company and will be its president.

K. M. Newcum, for the past year Refrigeration Service Editor of AIR CONDITIONING & REFRIGERATION NEWS and author of the Master Service Manuals, has joined the organization as sales manager.

Factory and general offices of the Superior Valve & Fittings Co. are located at 500 37th St. here. This building is of one-story construction and has 10,000 sq. ft. of floor area. (Concluded on Page 9, Column 2)

### Downed By Appendicitis, June Wood's Sales Are Proof He's Not 'Out'

OKLAHOMA CITY, Okla.—When a salesman is resourceful enough to conduct "business as usual" from a hospital bed, two days after he has been operated upon for appendicitis, it's a pretty safe bet that a little thing like a business slump isn't going to slow him up very much.

June Wood, refrigerator salesman for the Doc & Bill Furniture Co., came down with appendicitis one Saturday morning, but he wasn't "out"—not by a quota-full. The next Monday morning, he was on the telephone from his bed in Oklahoma City General Hospital, doing business as usual, even if not from the same old stand.

All winter, he had been talking (Concluded on Page 2, Column 5)

### One Salesman Who Hasn't Lost His Fight



A convincing answer to the 'Has the Industry Lost Its Fight?' editorial in a recent issue of the News is furnished by Salesman June Wood of Doc & Bill Furniture Co., Oklahoma City, who refused to let even an appendicitis operation keep him from doing "business as usual." He is shown here canvassing by telephone from his hospital bed (picture from Oklahoma News, which ran a feature story on his courage and ingenuity).

### 12-Weeks' Drive In Capital Aimed At Replacement

#### Designed To Show Progress In Refrigerators In Last 5 Years

WASHINGTON, D. C.—Under the theme, "Look at Your Refrigerator," the Electric Institute of Washington has inaugurated a 12-week campaign on electric refrigeration aimed directly at the replacement market. Principal effort of the drive is to convince owners of refrigerators more than five years old that their unit is out of date and inefficient, in the light of recent mechanical advancements.

Arrangements for cooperative advertising by distributors and the power company, to be carried over distributors' names, are being cleared through the Institute, purpose being to increase the amount of space used by each distributor.

Distributors have been asked to indicate the amount of advertising (Concluded on Page 5, Column 1)

### Feb. Commercial Sales Close To '37 Record

DETROIT—Commercial refrigeration and air-conditioner sales by manufacturer-members of National Electrical Manufacturers Association to distributing outlets, down 23% in January as compared with the same month last year, fought their way back during February to a point only 136 units below February, 1937, according to reports from 14 firms.

World commercial sales by manufacturers totaled 14,841 units during (Concluded on Page 2, Column 4)

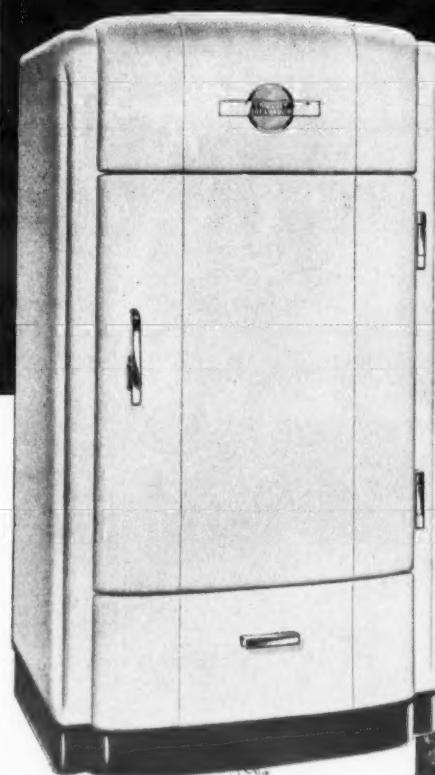
## Nema Commercial Members Report February Sales Of \$2,153,401

SALES FOR FEBRUARY, 1938	Domestic Quantity	Canadian Quantity	Other Foreign Quantity	Total World Quantity	Value
1. Bottle Water Coolers—Complete.....	239	\$ 16,407	...	\$ 1,237	257 \$ 17,644
2. Pressure Water Coolers—Complete.....	697	72,129	4	437	28 2,948 729 75,514
3. Water Coolers—Low Side Only.....	44	4,422	...	2	181 46 4,603
4. Ice Cream Cabinets—Complete.....	1,683	234,808	79	8,880 123	14,285 1,885 257,973
5. Ice Cream Holding Cabinets Only (Remote).....	306	41,116	4	534 8	1,193 318 42,843
6. Bottled Beverage Coolers—Complete.....	3,688	308,674	648	58,563 159	13,053 4,495 380,290
7. Beverage Coolers (No High Sides).....	96	6,019	...	1	43 97 6,062
8. Milk Coolers—Complete.....	6	1,041	...	...	6 1,041
9. Milk Cooling Cabinets (No High Sides).....	...	...	...	...	...
10. Self-Contained Air Conditioners					
Air Cooled—All Sizes.....	757	155,465	...	57	11,907 814 167,372
11. Self-Contained Air Conditioners					
Water Cooled—Under 2 Hp.....	7	582*	...	1*	433* 6 149
12. Self-Contained Air Conditioners					
Water Cooled—2 Hp. and Up.....	72	39,551	...	...	72 39,551
13. Air Conditioners—Central Stations					
5-Ton Capacity and Over.....	22	21,826	1	1,460 2	1,812 25 25,098
14. Air Conditioners—Floor Type (No High Sides).....	153	53,192	2	1,240 13	6,504 168 60,936
15. Air Conditioners—Ceiling					
(Cooling Only—No High Sides).....	131	35,836	...	27	3,154 158 38,989
16. Air Conditioners—Ceiling Type					
(Equipped for Heating—No High Sides).....	27	14,295	...	4	2,240 31 16,535
17. Air Conditioners—Residential Type					
(No High Sides, Boilers, or Furnaces).....	30	5,455	1	225 20	4,500 51 10,180
18. Condensing Units Less Than 1/2 Hp.....	1,157	67,797	19	1,274 196	10,810 1,372 79,881
19. Condensing Units 1/2 Hp.....	1,854	125,225	25	2,857 289	23,515 2,168 151,597
20. Condensing Units 1/2 Hp.....	891	83,842	31	3,298 148	16,387 1,070 103,527
21. Condensing Units 3/4 Hp.....	497	67,842	25	3,608 190	27,224 712 98,674
22. Condensing Units 1 Hp.....	328	50,681	22	3,963 60	10,462 410 65,106
23. Condensing Units 1 1/2 Hp.....	230	43,680	6	1,294 36	7,670 272 52,644
24. Condensing Units 2 Hp.....	124	28,445	4	892 25	6,155 153 35,492
25. Condensing Units 3 Hp.....	65	19,114	1	384 40	10,187 106 29,685
26. Condensing Units 5 Hp.....	57	26,900	...	22	11,109 79 38,009
27. Condensing Units 7 1/2 Hp.....	32	20,959	...	12	6,758 44 27,717
28. Condensing Units 10 Hp.....	36	27,309	...	16	13,174 52 40,483
29. Condensing Units 15 Hp.....	33	23,520	2	1,060 6	6,595 41 31,175
30. Condensing Units 20 Hp.....	24	26,145	1	1,145 2	2,471 27 29,761
31. Condensing Units 25 Hp.....	20	25,405	...	...	20 25,405
32. Condensing Units 30 Hp.....	22	31,901	1	1,365 1	1,365 24 34,631
33. Condensing Units 40 Hp.....	11	17,598	...	1	1,570 12 19,168
34. Condensing Units 50 Hp.....	15	29,261	...	...	15 29,261
35. Total—Lines 18 to 34 Inclusive.....	5,396	715,624	137	21,140 1,044	155,452 6,577 892,216
36. Total—Lines 1, 2, 4, 6, 8, 10, 11, 12, 35.....	12,545	...	868	...	1,428 14,841
37. Commercial Evaporators (Not Reported Above).....	1,917	62,118	183	6,068 590	24,220 2,690 92,406
38. Air-Conditioning Evaporators.....	121	22,841	...	10	1,158 131 23,999
39. Total Commercial & Air Conditioning.....	...	\$ 1,811,400	...	\$ 98,547	...
Includes sales and credits.					\$ 342,454 \$ 2,153,401

Includes sales and credits.

# CROSLEY

BUILDS A NEW  
PLANT FOR A NEW  
REFRIGERATOR



NEW CROSLEY PLANT AT RICHMOND, INDIANA

## INCLUDING BONDERIZING

In a new, million dollar refrigerator cabinet plant, now completed and in operation, Crosley is equipped to make a maximum of 1200 per day of their 1938 Shelvadors. These huge manufacturing facilities are matched by fine working conditions that assure a perfected product.

Beauty, through new cabinet design, increased economy, from refinements in the refrigerating unit and new convenience features provide an inbuilt quality that will attract 1938 buyers. The new models include a built-in Crosley radio, or

provision for adding one, as part of the cabinet design.

To maintain this beauty all Crosley cabinets are Bonderized, in new and modern equipment, giving the 1938 Shelvador protection from rust and more positive adhesion to the lustrous white enamel. This is a valuable sales feature that can be used effectively in every demonstration.

PARKER RUST-PROOF COMPANY  
2197 E. Milwaukee Ave. • Detroit, Michigan

SEND FOR THIS BOOK



It includes data and charts showing what a salesman should know about Bonderizing.

**PARKER**  
Processes CONQUER RUST  
BONDERIZING • PARKERIZING

## Nema Beverage Cooler Sales Ahead Of '37

(Concluded from Page 1, Column 5)

February of this year, compared to 14,977 in the same month last year. In the United States alone, sales totaled 12,545 units this February against 13,210 last year.

Packaged equipment continues to lead the way out, in the commercial field. Sales of complete ice cream cabinets during February of this year were 1,885 units, compared with 1,191 units in the same month last year; and bottled beverage cooler sales mounted to 4,495 units, against 2,874 units in February, 1937.

Continuing the pace set in January, sales of self-contained air conditioners totaled 892 units in February, against 93 units reported in the same month last year.

Condensing unit sales were under February totals last year, with 6,577 units reported against a figure of 9,178 in the month last year. Dollar volume of world sales was up to \$2,153,401, however, compared with \$2,032,283 for February, 1937.

## Labor Relations Board Reviewing Servel Case

WASHINGTON, D. C.—Arguments on the protest of Servel, Inc., to the recommendation and report of James C. Batten, examiner for the National Labor Relations Board, were heard here by the board April 14.

Examiner Batten, following hearings conducted at Evansville on the complaint of the United Electrical, Radio & Machine Workers Union, C.I.O. affiliate, recommended that the company reinstate 18 employees allegedly discharged for union activity and that it "cease and desist" from interfering with, restraining, or coercing its employees in the rights of self-organization as guaranteed in the Wagner Act. (AIR CONDITIONING & REFRIGERATION NEWS, March 16.)

Argument on behalf of the company was presented by Richard C. Hunt, New York, general counsel for the company and director.

Answering charges of Examiner Batten, Hunt said there has been neither company financing nor attempted domination of the Servel Workers Council since enactment of the Wagner Act, and added that money for the council was provided by the Servel Employees Association. This latter organization, he explained, was set up "to coordinate athletics and similar morale-building activities," and its funds are derived from operation of eating stands within the plant. Association revenue is about \$14,000 a year.

## Fassnacht To Represent Pelco In New York



RICHARD C. FASSNACHT

(Concluded from Page 1, Column 1)

coolers, Koolie electric beverage coolers, and Century icers.

Joining National Paper Tube Co. in Philadelphia, Mr. Fassnacht later became secretary of the organization. He resigned to join Lamson Co., pneumatic tire manufacturer, as assistant to the New York manager.

Leaving Lamson, Mr. Fassnacht was for four years eastern representative of Leonard Refrigerator Co.

## Salesman Closes Deals From Hospital Bed

(Concluded from Page 1, Column 4)

electric refrigeration to prospects, and had been told to "see me next spring." When spring came, so did the appendicitis attack—but Mr. Wood didn't let that little mishap stop him.

Calling a nurse to hold the telephone for him, he began closing his winter prospects by wire.

"I just laid back, closed my eyes, and thought of a good sales talk," he says. "I sold a 7-foot refrigerator by phone, got two more prospects for radios, and another prospect is going down to the showroom to look at the refrigerator she's interested in."

Before he joined the Doc & Bill Furniture Co., Mr. Wood was a motorcycle policeman in Detroit. When an accident forced him to give up this work, he began selling appliances to his friends on the force.

"We each have a sales quota down there," he says, referring to the dealership. "I couldn't see why I couldn't sell my share just stretched out comfortable in bed."

Porcelain enamel makes bigger profits possible  
Porcelain enamel makes satisfied customers  
Porcelain enamel is by far the safest, most dependable, most profitable finish to both those who make and sell, and those who buy and use  
PORCELAIN ENAMEL INSTITUTE, INC.  
612 NORTH MICHIGAN AVENUE • CHICAGO  
DURABILITY  
PORCELAIN ENAMEL  
Painted on Metal

# The Handiest Refrigerator Ever Built!

## Sell the SHELVADOR

Here's a refrigerator in which a woman can get at things easily. Nothing gets lost. The shelves in the door permit storing of small items so ingeniously that you can actually get MORE FOOD in the Shelvador than in any refrigerator of equal size.

This is still the greatest sales story in the refrigerator field . . .

**PLUS**  
*All these  
Greater  
Values*

1. Faster Freezing
2. Greater Ice-Making Capacity
3. Crosley Quick-Release Cube Tray
4. Lower Cost Refrigeration  
Short Running Time  
Low Operating Cost  
Long Life Due to Short Running Time
5. Safe Refrigeration  
Low Box Temperature  
18-Point Temperature Control  
Powerful Hermetic Unit
6. More Rugged Construction  
and best of all—MORE USABLE SPACE  
with the exclusive shelves-in-the-door.

THE CROSLEY RADIO  
CORPORATION • CINCINNATI  
POWELL CROSLEY, Jr., President

Home of "the Nation's Station"—WLW—500,000 watts—70 on your dial



### With Built-In RADIO

The kitchen is fast becoming an important room, for informal entertaining finds it the center of attraction. This is a feature women are liking and smart dealers are taking full advantage of it.



The new, improved Electrosaver Hermetic Unit is more efficient, more economical than ever before. Each unit is individually tested in the Crosley Proving Ground for operating performance under the most severe extremes of temperature and humidity.

## CROSLEY SHELVADOR

Put your effort behind the refrigerator  
that is easiest to sell women!

## Specialty Selling Methods

### Massed Displays and Salesmen's Drill Factors In 400 Washer Sales In Month

BOSTON — Selling 400 General Electric washers in one month, R. H. White Co., local department store, recently conducted what is said to be one of the most successful washer promotion campaigns ever staged in New England.

Four main factors were said by store officials to be largely responsible for the sales record established during the campaign—newspaper advertisements, street window display, mass and spot interior displays, and special training of salesmen.

The newspaper advertisements featured a special washer at a reduced price to attract prospects. Despite a blizzard the day after the first advertisement was published, 20 washers were sold, the department manager claims.

Center of the street window display was the washer featured in the newspaper advertisements, and other washers were exhibited in the attractive set-up.

Mass display of washers, backed by panels featuring the major advantages claimed for them, was arranged in the store's house furnishing department. In addition, six "spot" displays, each featuring a

single washer mounted on a pedestal with a modernistic, semi-circular backing, were established throughout the store.

In each spot display, a floodlight in the circular top shone down on the washer.

Salesmen were drilled thoroughly on the washer in two sales meetings held prior to the announcement of the sale. Each salesman was trained to make an effective demonstration of the product.

W. L. Thompson, General Electric distributor for Boston, and A. B. Hatch, G-E district home laundry representative, assisted the White company in the promotional campaign.

### 55 Sales Reported In First Week Of Pittsfield Drive

PITTSFIELD, Mass.—Sales of 55 refrigerators and 10 ranges were reported by 35 electrical appliance dealers and salesmen for the first week of the current cooperative refrigerator and range campaign being staged here.

### Salesmen Given 90-Day Sole Rights On Leads

FORT WORTH, Tex.—Exclusive rights for 90 days to every sales lead he secures are granted to each refrigerator salesman of Monning Dry Goods Co., relates Dorsey Rooke, department manager.

The salesman keeps a record on each lead, works on it continuously for 90 days, and then either closes the sale or drops the prospect.

If a sale is made, a follow-up call is made the day after delivery, and another within two weeks. On these calls, the salesmen often obtain additional leads, says Mr. Rooke.

Mr. Rooke declares that this 90-day follow-up policy has been largely responsible for his department's 300% sales increase during a recent period as compared with the same period last year.

### Radio Cooking School Held In Birmingham, Ala.

BIRMINGHAM, Ala.—A daily "Cooking School of the Air," has been inaugurated here by Birmingham Electric Co. in cooperation with a number of dealers. A half-hour program is broadcast each week day at 2 to 2:30 p.m., except Saturday, when it is put on from 10:30 to 11 a.m.

The program is given before a visible audience in Birmingham Electricity Co.'s large auditorium with Miss Earline Tully, chief home economist, in charge. Admission to the school is by tickets which dealers distribute.

## Boys Vieing For Pony Provide Leads That Result In 29 Sales, 1,000 Prospects

### Appliance Store Partners



CHARLES T. SMITH



LUCILLE STONNELL

CHARLOTTE, N. C.—With a Shetland pony as a very unusual grand prize, a contest for youngsters resulted in the sale of 29 major appliances for Charles T. Smith and his vivacious young woman partner, Lucille Stonnell, who run The Good Housekeeping Shop, Kelvinator dealership here.

The pony was offered by the store to the youngster who piled up the largest number of points in the prospect-getting contest which lasted for almost eight weeks. For each lead brought in, 50 points were awarded; for each lead that resulted in the sale of a major appliance, 1,000 points were awarded.

"The contest caught on like wildfire," said Mr. Smith. "For miles around, parents cooperated with the kids. The novelty of the contest led the Charlotte News to cooperate with us in publicizing the event.

"We advertised in every conceivable manner. We even dressed up the pony in colorful trappings and had a jockey parade him around the schools and pass out handbills giving full details of the contest."

"One boy roller-skated into town over 17 miles of road, clutching a newspaper clipping describing the contest."

Finally the contest narrowed down to 15 youngsters, all grimly determined to ride the pony home or know the reason why.

After the results were tabulated and announced, young Billy Griffin warbled "Pony boy, pony boy—" as he proudly rode home on his gallant Shetland steed. Billy had rolled up the astounding total of 25,000 points, and had brought in nine sales.

"More important than the sales made during the contest is the prospect list of 1,000 active leads we have accumulated," Mr. Smith said. "We've been in business only six months, but we are now one of the best known appliance dealers in town.

"The pony contest was a great success, but we're not resting on our laurels. My partner, Miss Lucille Stonnell, has found her experience as a home economist for Kelvinator pays big dividends. She holds demonstrations and cooking classes for church groups and women's clubs.

We build considerable goodwill among such groups by paying the sponsors 10 cents a person if a class of 50 people can be assembled. They pay this money into the club funds or pet charities."

Mr. Smith, who for several years was with the sales promotion department of Kelvinator Corp., stated that in its six months of operation, The Good Housekeeping Shop has sold 75 refrigerators, 15 electric ranges, and a number of washers, ironers, and other Kelvinator appliances.

"Duke Power Co. pioneered the Kelvinator refrigerator in Charlotte, and in the past 15 years they have succeeded in building up a remarkable acceptance of Kelvinator products," said Mr. Smith, in explaining why this city was selected as the place in which to open the new dealership.

"Miss Stonnell and I decided that here was a great opportunity to mer-

chandise the complete Kelvinator line of appliances. So far we have had no occasion to regret our decision.

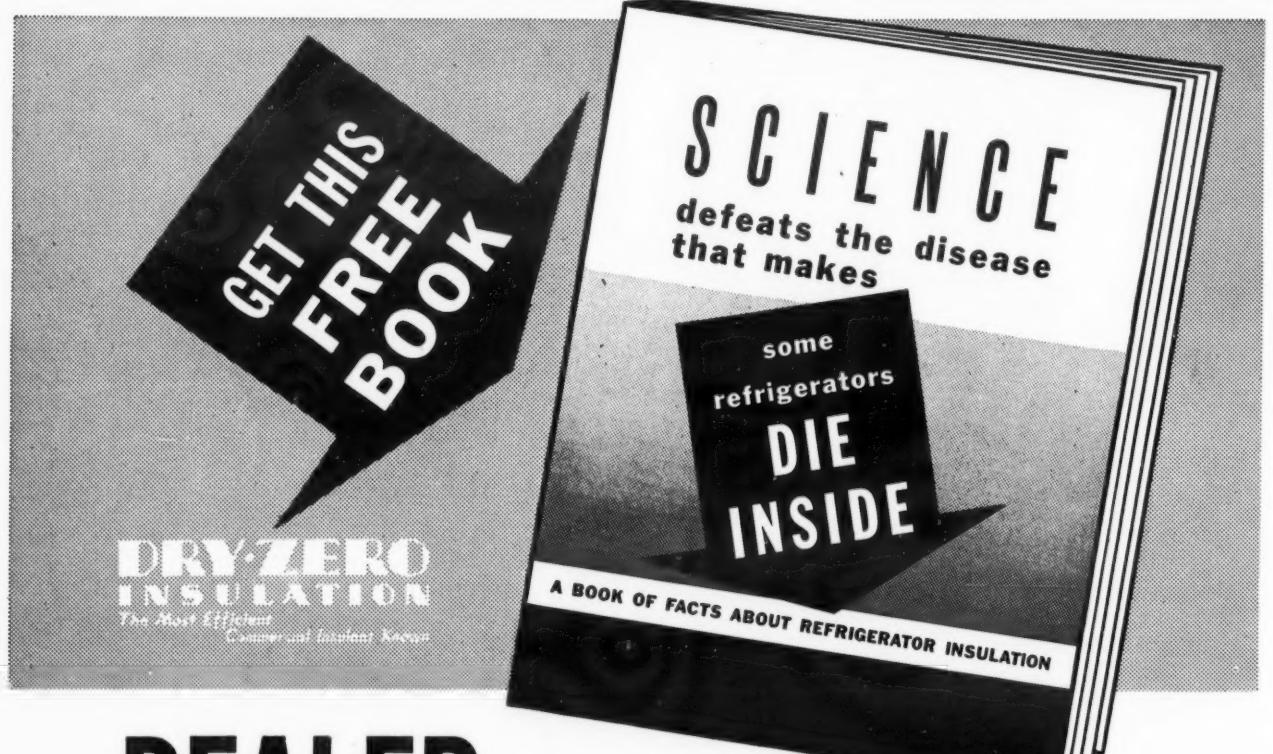
"There's only one man I know who isn't sure he feels about us as he once did. That's Mr. Griffin, Billy's father. He complains that he's just about worn out refereeing fights among the neighbors' kids over who's going to get the next chance to ride Billy's pony."

### New Hampshire Dealers To Give Cooking School Prizes

MANCHESTER, N. H.—Two electric ranges, a refrigerator, a washer and an ironer will be awarded as prizes during the annual spring cooking school, sponsored by the Manchester Electric Appliance League, being held April 18 to 22, in the State theater here.

On the first day of the school, a Universal refrigerator was to be awarded. Prizes on other days include a Westinghouse electric range, a General Electric washer, a Hot-point electric range, and a Kelvinator ironer.

In addition to these major prizes, 25 baskets of food will be given out.



## MR. DEALER IT WILL PAY YOU TO KNOW WHY INSULATION IS IMPORTANT

• Here for the first time is a clearly understandable explanation of the important job performed by the insulation hidden away in the walls of the refrigerator. With pictures, cartoons, and diagrams, this book tells the story of refrigerator efficiency and operating

PROSPECTS economy that your customers enjoy if your refrigerators are insulated with Dry-Zero. It shows why Dry-Zero lasts a lifetime; why it gives better protection; why it cuts down operating costs. This book is an ideal sales help for use with prospects because of the dramatic, direct-to-the-point illustrations. It can be used for training salesmen because of the insulation facts packed into its pages. Furthermore, the selling ideas contained in it can be adapted for

### SALES TRAINING

of all, it gives you in 32 pages a clear, complete story of how important insulation is to you, the dealer. You will recognize the answers to questions that have been

in your mind for years; questions that have been repeatedly asked by prospects and salesmen, too. Get these answers.

The information will be of utmost value to you in all of your sales work. Send the coupon for your own free copy. Extra copies are available for your salesmen at 25¢ each. Make extra sales this season with this book.

DRY-ZERO CORPORATION, MERCHANDISE MART, CHICAGO

SEND THIS BOOK: One copy is to be sent free. Additional copies are to be furnished at 25¢ each.

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Street \_\_\_\_\_  
City, State \_\_\_\_\_  
Refrigerator handled \_\_\_\_\_  
Extra copies at 25¢ each \_\_\_\_\_ copies  
AC

This insulation repels water and rot and fungus growths. It never develops smells, nor does it sag down into a pulpy disintegrating mass. This is why it is used in more than a million household refrigerators, as well as 9 out of 10 new railroad refrigerator cars, and many thousands of refrigerated motor trucks.

Dry-Zero Never Dies



M. D. HUBBARD FOUNDRY P. M. HUBBARD J. A. HUBBARD SPRING COMPANY  
633 CENTRAL AVE., PONTIAC, MICH.

## Campaign Aimed at Replacement Market Launched By Washington Electric League

(Concluded from Page 1, Column 5) planned for April and May, and the lineage rates applying in the several Washington newspapers. On this basis, allocation of funds for additional space will be made.

Conditions under which cooperative advertising funds are being made available to distributors are as follows:

1. That all space to be considered for cooperative advertising be used exclusively for advertising 1938 electric refrigerators.

2. That all such advertising be carried during the months of April and May.

3. That all copy features the following items in layout and copy: "Look at Your Refrigerator."

"Electric Refrigerators—so safe, so quick, so cheap."

"1938 Electric Refrigeration is real economy at Pepco's low rates."

4. That space equivalent to the distributor's estimated cost, and featuring the Institute's replacement appeals, be carried before payment for additional space paid for through the Institute becomes due.

5. That, as a part of the campaign, space in addition to the distributor's estimate be carried in accordance with the Institute's requirements, and in an amount at least equal to the authorization given by the Institute.

### DEALER ADVERTISING PLAN

For dealers, a similar plan has been developed, deviating in two particulars from the distributors' plan. Additional space is available on the basis of size of advertisements, varying from 15 lines by three columns (for a three-column advertisement 100 lines deep) to 40 lines by eight columns (for a full page.)

Copy for this portion of the space will be furnished by the power company, and will appear at the bottom of the advertisement. Submission of tear sheets and receipted bills from newspapers are required in both cases to qualify for power company cooperation.

For salesmen, a "stock market campaign" has been worked out, modeled in general along the same lines as that of distributors and dealers in New Orleans, described in the April 13 issue of the News.

### CONTEST FOR SALESMEN

For every \$100 of refrigeration sold, the salesman receives one share of stock, "having a par value of \$1. Redemption value of the "stock" depends upon the number of refrigerators sold, and reaches par when the quota of 3,500 refrigerators is attained. If the quota is passed, the "market values" increase. This year's quota is 1,500 less than 1937 sales in the area.

In addition to "stock" awards, more than \$300 in prizes (baseball tickets, cash etc.) will be distributed during the drive. Leading two salesmen will receive these prizes at breakfast meetings.

Rules governing the campaign are: Quota is 3,500 refrigerators, which must be sold at retail and on Pepco lines.

Only 1938 refrigerators will count toward stock participation, but new 1937 refrigerators sold will count toward quota attainment. Specials and rebuilt refrigerators will not be counted.

Salesmen who participate must be representatives of retailer members of the Institute.

Salesmen are entitled to one share of stock, worth \$1 at par, for every \$100 of refrigeration they sell.

### Crosley Replevins 3,631 Units From Rex Plant

CONNERSVILLE, Ind.—Following a writ of replacement on a complaint filed with the county clerk here by the Crosley Radio Corp., Cincinnati, workmen April 13 removed 3,631 enameled refrigerator cabinets from the strike-bound plant of the Rex Mfg. Co. here. The cabinets were sold to the Crosley company before a strike called by the United Automobile Workers of America, a C.I.O. affiliate, tied up operations.

The cabinets were loaded by a group of workmen representing rival A. F. of L. and C.I.O. unions. Meanwhile the plant remained closed and picketing continued.

## 'Keep Your Dealers and They'll Keep You' Plan Recommended By R. Cooper Jr.

(Concluded from Page 1, Column 3) boxes to his dealers as they need them.

"This agent may not hang up temporary records like the more showy carload lot boys, but he earns the respect and gratitude of dealers, and when business is to be had, he gets it."

It might be pointed out, parenthetically, that the Cooper organization has never been known as a gently tended bed of simon-pure hothouse calla lilies. Dick Cooper, himself, would be first to admit that he fosters hard hitters, and is out after sales.

And competitors still recall with venom the fact that it was Cooper who discovered the apartment house receivership racket. They aren't mad at Dick so much as they are angry at themselves for missing the boat for so long while Cooper was replacing refrigerators in apartment houses all over town.

Nevertheless it is a fact that Cooper has been in business for 11 years in Chicago, that he entered the New Year with low stocks and that his dealers are in comparatively good spirits today.

He hauled out a ledger and showed the writer current figures on April sales all over his territory. All but two refrigerator sales were 1938 models. And there wasn't a 4-cu. ft. job on the list!

The writer well remembers when the new R. Cooper Jr. showroom, probably the most elaborate in the country, was opened on Wacker Drive back in 1931. It was known as "Cooper's Folly," and competitors came from all over to look, shake their heads and grin:

"Well, it won't be long now."

But this Mammoth Cave of refrigerators was all part of Cooper's plan to keep from overloading dealers. Prospects can be sent there to see

any kind of an appliance, including the largest commercial installations. Dealers get credit for the sale, Cooper gets the business.

Recently another big and elaborate showroom had to be opened a few blocks away on Lake Shore Drive. G-E dealers keep them both filled with prospects.

And of course, customers walk in under their own steam. Last Saturday afternoon, Mr. Cooper, himself met a man, wife, and architect in the Wacker Drive showroom, and proceeded to take their order for a 16-cu. ft. refrigerator, a big range and some smaller appliances . . . all for their new home in Florida. The order was turned over to George Patterson, distributor down there.

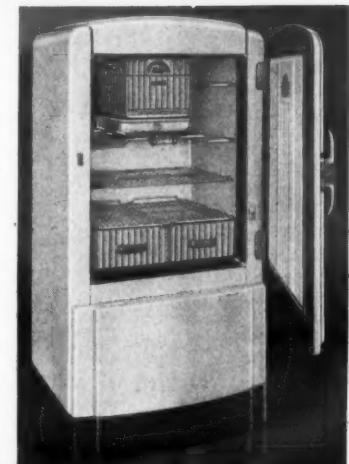
During the writer's visit an enormous fan at the entrance to the main showroom was stopping traffic.

"Keep your dealers and they'll keep you," Cooper paraphrases Ben Franklin.

It's not that Cooper doesn't believe in pressing for business, in trying to get orders. It's just that he doesn't believe in trying to get these orders and make deliveries, all at one time.

# SELL 26% MORE Quickly USABLE SPACE

Because of the *Conservador*



Three new lines meet every prospect's demands in every selling bracket. A price-leader line without the Conservador—and the EL De luxe line, also without Conservador (illustrated at left) for those who want the utmost in quality and performance at a price they would expect to pay for an ordinary refrigerator. Startling eye-appeal. Scores of advanced features. Your customers will instantly recognize EL Models as outstanding value.



Any prospect can see the difference in a Fairbanks-Morse refrigerator the instant you open the outer door

YOU lift yourself right out of the "me too" competitive rut with the Fairbanks-Morse CONSERVADOR Refrigerator. Here is the one refrigerator in the world that is radically different.

- different in convenience features!
- different in demonstrative possibilities!
- different in the 26% more quickly usable space it gives!

And it bears the oldest engineering name in America—a name that for 108 years has been pre-eminent in precision machinery.

With the Fairbanks-Morse CONSERVADOR Refrigerator you can match any worth-while feature of any competitor. But no competitor can match your features.

That means every refrigerator you sell is an advertisement for you. The business you build today will grow bigger, better, and more profitable with each succeeding year. For you are selling an exclusive specialty—not just another refrigerator.

Write today for full particulars on this profit-building franchise to Fairbanks, Morse & Co., Home Appliance Division, 2060 Northwestern Ave., Indianapolis, Indiana.

BACKED BY 108 YEARS OF ENGINEERING AND MANUFACTURING EXPERIENCE



The new Fairbanks-Morse E line with the Conservador goes a step farther and offers the greatest of all features in any refrigerator—the Conservador. Its dramatic demonstration possibilities are unlimited and unequalled. It is the only outstandingly different refrigerator on today's market—the only refrigerator that puts you in a class by yourself because there isn't anything similar or just as good.

When it's even too hot for a Hottentot, COMFORTIZE with Fairbanks-Morse air conditioners.

# FAIRBANKS MORSE

REFRIGERATORS • RADIOS • WASHERS • IRONERS

# Air Conditioning

## 'Package' Conditioners In 3 and 5-Ton Sizes Introduced By Carrier

SYRACUSE, N. Y.—Two new self-contained package type air-conditioning units have recently been introduced by Carrier Corp. in 3-ton and 5-ton capacities. Designed for commercial applications, the units are characterized as "Carrier's latest answer to low-cost air conditioning."

Although the new units have a larger capacity than the self-contained room cooler built by the company in 1932, the 3-ton unit is said to take up less floor space, and the 5-ton unit is said to use only one square foot more.

Water-cooled units, the company claims, require only three simple connections and can be installed in a few hours. The 3-ton unit delivers 1,100 c.f.m. of air, and the 5-ton unit 1,480 c.f.m.

Units are equipped with Carrier louvers for selective air delivery to suit requirements. With these new outlets, air can be discharged to the room from front, back, either side, upward, downward, concentrated, or spread.

Other features include complete insulation against sound by mounting

moving parts in rubber, dynamically-balanced compressor to eliminate "whipping" or vibration; a styled cabinet finished in walnut, with satin gloss; rust-proof condensate drip pan; selector and thermostat dials on cabinet at eye level for both manual and automatic temperature regulation; controlled mixture of outside and room air by large area return grille with adjustable louvers.

## Committees Named For June ASHVE Meeting

NEW YORK CITY—Committee on arrangements for the semi-annual meeting of the American Society of Heating and Ventilating Engineers at Hot Springs, Va., June 20 to 22, has been announced by E. H. Gurney, president of the association.

Members of the committee are: James A. Donnelly, general chairman; J. K. Peebles, Jr., engineer, Charlottesville, Va.; John Shanklin, secretary-treasurer, West Virginia Heating & Plumbing Co., Charleston, W. Va.; L. Ourusoff, engineer of utilization, Washington Gas Light Co., Washington, D. C.; I. B. Helburn, Wyman Engineering, Cincinnati; E. W. Klein, district manager, Warren Webster & Co., Atlanta; and Robert McC. Johnston, Virginia Polytechnic Institute, Blacksburg, Va.

## Self-Contained Chilled-Water Units With Individual Control Used To Cool 100 Hotel Tulsa Guest Rooms

TULSA, Okla.—Air conditioning in the new 14-story Hotel Tulsa will include 100 guest rooms, five public rooms, and provision will be made for conditioning the balance of the building, according to Bert Natkin, Tulsa branch manager of Natkin & Co., Westinghouse air-conditioning distributor, which is furnishing equipment for the installation.

Designed by Carl J. Kiefer, Associates, Cincinnati architects, of which H. N. Hermann is president, the building is owned and operated by the Western and Southern Life Insurance Co. of Louisville, Ky.

Three Westinghouse 60-hp. direct connected hermetically-sealed air-conditioning compressors are being used, each one inter-connected with a separate evaporative condenser. This equipment is located in the basement of the hotel, with evaporative condenser discharge ducts going to the alley.

### PUBLIC ROOMS SYSTEM

One of the compressors operates in connection with a Patterson-Kelley shell-and-tube cooler, which in turn furnishes water to two air washers used in air conditioning five public rooms; one air washer serving the Art Moderne room on the first floor, the other washer serving the Junior Ballroom, American room, English room, and Japanese room, all located on the mezzanine floor of the hotel.

Heating is supplied by means of instantaneous hot water heaters

which send hot water through coils installed in the supply ducts to the separate rooms.

Air distribution in the Japanese, American, and English rooms is by means of anemostats located in the ceiling of the respective rooms. In the Junior Ballroom and Art Moderne room, supply outlets are located in the side walls, and air is distributed by directional flow grilles.

Conditioned air also is supplied to the telephone operator's room located on the first floor.

### HOW GUESTS ARE COOLED

The other two compressors are connected to a second Patterson-Kelley water cooler which supplies chilled water to 100 Trane room-type self-contained air-conditioning units located in guest rooms on the third, fourth, and fifth floors of the building.

Cold water is piped through pipe-troughs in the corridors, and from there into the ceiling-type Trane units. Each unit is complete in itself, having four-row cooling coil, drip pan, fan, and motor. Motors are controlled from the side wall of the room, so occupants may regulate speed of the unit to give the comfort conditions desired.

Fresh air is introduced to the "U" shaped building through two large conditioning units at the ends of the "U." This air is cooled and its relative humidity maintained at approximately 40%. The separate conditioning units in the guest rooms have openings into the corridor through which this cooled, dehumidified outside air is carried into each unit, assuring a constant supply of outside air in the respective rooms.

### INTER-CONNECTED UNITS

Compressors on the Hotel Tulsa job are inter-connected, so that should one of the compressors used for guest room conditioning break down, the compressor cooling public spaces can be thrown over to room service. It is paramount with the hotel that service be maintained for the guest rooms at all times.

Provision has been made for the installation of one more 60-hp. compressor to serve the Topaz Room, a ballroom accommodating 1,000 people. One more air washer would be used in connection with this room.

The system also provides for additional compressors, evaporative condensers, and washers, to be installed from time to time to provide for more guest rooms.

## Country Club Installation Boosts Business 30%

MACON, Ga.—Installation of Westinghouse air-conditioning equipment in the Macon Country Club was followed by a 30% increase in business during the past summer, reports B. F. Walker, manager of the club.

"June brought more profits than any June in the history of the club," Mr. Walker stated, "and the other summer months were equally good, our August business being the best we have ever enjoyed."

Installation of the equipment has attracted new members to the club, and has been the cause of many membership renewals. Rentals of guest rooms have increased sharply, instead of falling off during hot summer months.

"We find that our guests are easier to please, that they call for more food, and 25% more beverages were sold during the summer. Billiard and card rooms have had an increase of 40% in patronage."

The Westinghouse system installed in the club includes 42 floor-type conditioners and 14 suspended-type ceiling units.

## Clothing Store Testifies That Conditioning Upped Business

MINNEAPOLIS—A testimonial to the benefits of air conditioning is contained in the following letter received recently by Pioneer Air Conditioning Corp. from Guy Hinkley, of Leuthold & Hinkley, clothing and shoe store in Eagle Grove, Iowa:

"It occurs to us that you might be interested in knowing the outcome of our experiment with the air-conditioning unit we purchased from you last July.

"As you know, our store faces the north, it is 22 by 130 feet, we have a large western exposure which needs special curtains and which will be installed next spring in order to make the unit even more effective, however, we had no trouble to keep our room at 80° F. the hottest days when the thermometer registered 98 to 100° outside. This was entirely satisfactory in every respect. The cost was so little as to be negligible. Our entire water cost was \$10 the time we used it which was two months.

"The change in the temperament of both clerks and customers was marked from the first. The help were always in a happy, pleasant frame of mind, and the customer soon became so after coming into the cooler atmosphere.

"All this was reflected in the business, and we feel that the saving that we shall enjoy in the heating expense will offset the summer expense and much more. We are having the steam pipes run through this unit, and the circulation of hot air we know will be just as effective as the cool air in summer."

"Altogether, we are very much pleased, and would not part with it for many times its cost, if we could not have another."

## Charleston, W. Va. Dealer Given Contract To Do Baking Plant Job

CHARLESTON, W. Va.—General Roofing & Air Conditioning Corp. has been granted the contract for air conditioning, plumbing, and heating of the new Conlon Baking Co. plant to be erected in neighboring Kanawha City.

The structure, said by its designers to embody all modern architectural and engineering features, will be constructed of ceramic terra cotta, structural glass, and glass masonry, treated with stainless steel. The entire plant will be completely air conditioned for comfort in its commercial department, and process conditioned in its manufacturing areas.

## Hotel Remodels Cafeteria; Adds Air Conditioning

ALBANY, Ga.—Remodeling of the old cafeteria in the Lions Hotel into a modern coffee shop included concealed lighting, modernistic furnishings, and a complete air-conditioning system.

Conditioning equipment located in the kitchen of the hotel is served by a deep well under the building. Ducts running from the conditioner over the lunch counter are concealed in a space furred down from the ceiling. Air discharge is horizontal from the side of the furred space.

A complete exhaust system removes heat generated by coffee urns, toasters, and grills.

The conditioning system also is used for heating the building, and provides a constant supply of fresh air to the room.

## Outsell all others with Copeland

### Commercial Refrigeration

The efficiency, economy and dependability of all Copeland Commercial Units make prospects easy to find, make sales easy to close. Our twenty years of leadership in commercial refrigeration are evident in every unit.

Write for full facts TODAY!

HIGHEST  
EFFICIENCY!  
LOWEST  
OPERATING COST!  
LONGEST TROUBLE-  
FREE SERVICE!



COPELAND REFRIGERATION CORPORATION, Sidney, Ohio  
INVESTIGATE COPELAND'S COMPLETE LINE OF HOUSEHOLD REFRIGERATORS AND WATER COOLERS

## NEW SPACE COOLER MAKES DRAMATIC DEMONSTRATION!

ONLY  
\$159.50  
F.O.B. FACTORY



High quality "package" unit eliminates all engineering problems... Just plug it in... No water pipes to connect... No wiring to install... Fits on window sill... Demonstrates itself... A new APPLIANCE!



THE NEW Johnson Space Cooler is a compact, self contained electric refrigeration plant which circulates air over cold coils where it is cooled, cleaned, de-humidified—then distributed throughout the room. It provides the refrigerating equivalent of 650 lbs. of ice per day! Fits on any window sill. (Width 27". Window sealing-panels are furnished.)

Show it. Simply take it to a prospect's home or office. Plug it in. And let it sell itself!

Nothing that you handle makes a more convincing demonstration. The housewife in her kitchen, the professional man in his office, the

patient in the sick room gets sold—quick—on a unit that gives *real* relief from heat and humidity! The Johnson Space Cooler is the product of Johnson Motors, builders of the world famous Sea-Horse Outboard Motors, Briggs household refrigerators and other products of high quality. More than five years in refrigeration, with many notable developments to its credit, have given Johnson a perfect background for this latest achievement.

### DEALERS, DISTRIBUTORS

Send for full details, discounts and merchandising plans. The season is HERE. Every day means extra profits.



JOHNSON MOTORS • REFRIGERATOR DIVISION  
2050 MONMOUTH BLVD., GALESBURG, ILLINOIS

JOHNSON  
Space Cooler

GET GOING RIGHT NOW... WRITE, WIRE FOR DETAILS

# Commercial Refrigeration

## 'Drop In' Assembly For Milk Coolers Latest Frigidaire Product

DAYTON, Ohio—A new "drop-in" milk cooling unit for installation in any standard type of milk cooling cabinet has been developed by engineers of Frigidaire division, General Motors Corp., R. E. Smithson, manager of the commercial sales division, has announced.

Completely automatic in operation, the new unit consists of a cooling coil and motor-driven water circulating device enclosed in a cylindrical steel shell. A Frigidaire compressor provides the cooling for the coil, to which it is connected.

Circulator keeps the water bath in the milk cooler cabinet constantly in motion during the cooling operation. The unit has a capacity for cooling to a temperature below 50° F.

The new unit is being produced in two sizes, for cooling two to six cans of milk a day. It is shipped completely assembled and ready for installation.

## Smith Bros. Opens New Offices In Monroe, La.

MONROE, La.—Smith Bros. Equipment Co. has opened new offices and display rooms at 716 Louisiana Ave. here. C. C. Smith and W. D. Smith are co-owners of the company, which distributes Percival commercial cases and other commercial refrigerating equipment in Louisiana, west Mississippi, south Arkansas, and east Texas.

## Farmers In Modernizing Mood, Says Esco Head

CHARLOTTE, N. C.—R. M. Jamison, sales manager of Esco Cabinet Co., West Chester, Pa., spoke before three dairy industry meetings held in Charlotte and Greensboro, N. C., and Greenville, S. C., on April 4, 5, and 6. Increased interest in improving dairy farming and marketing conditions is being shown by both dealers and farmers in this area, Mr. Jamison reports.

## Sherman Resigns As Head Of Bastian-Blessing In N.Y.

NEW YORK CITY—Charles Q. Sherman has resigned as general manager of the New York branch of Bastian-Blessing Co., Chicago manufacturer of soda fountain equipment.

Mr. Sherman, who was active in introducing the Russ frosted food "Trayveyor" cabinet, has been active in the frosted foods business for 16 years.

In 1934, he became sales manager of the fountain and freezer division of Russ Soda Fountain Co. When this company was absorbed by Bastian-Blessing, Mr. Sherman was appointed general manager of the New York branch.

He organized a special division in 1937 to handle frosted food cabinets in connection with the sale of Honor Brads frosted foods.

Mr. Sherman has no definite plans for the future, it is said, but will continue his work in the frosted foods industry.

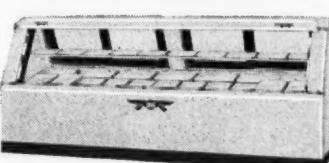
## Sherer Announces Four New Display Cases

MARSHALL, Mich.—Addition of four new types of display cases to its line of commercial refrigerating equipment has been announced by Sherer-Gillett Co.

Rounded corners, hinged baffles for easy cleaning of coils and baffles, and porcelain finish are listed by the company as leading features of the new units.

Lower list prices have been made possible by economies resulting from

### New Cabinet



standardization of manufacture, declares Kenneth D. Zenkere, sales manager.

Basic types are known as the G and 1400, one-shelf cases, and the H and 1600, two-shelf models. All four of the new cabinets are available in either top display or double-duty styles.

## Increased Business Expands Sweden Mfg. Co. Quarters

SEATTLE—Necessity of increased space because of growing demand, particularly to satisfy the company's export market for its ice cream freezing unit, has made it necessary for the Sweden Mfg. Co. to take larger quarters at 84 Bell St. here. Harry F. Swenson is owner of the company.

## Two Beverage Coolers Added By G-E; One For Heavy Duty

CLEVELAND—Addition of two new models of beverage coolers to the General Electric line of commercial refrigeration equipment for 1938 has been made by Harold T. Hulett, manager of the commercial refrigeration section of G-E's specialty products division.

Faster, more uniform cooling of bottled beverages, and lower operating costs, are claimed as chief features of the new models.

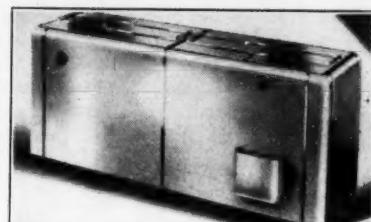
First of the two new models is the "Super-Service" cooler, TM-44, designed for use in bars, taverns, and other locations doing a heavy business on bottled drinks. With nearly twice the storage capacity of the average size cooler, this model is said to be especially applicable to bottled beer.

Second new member of the G-E bottle cooler line is the model TM-34, designed for average cooling capacity. Model TM-33, introduced last year, remains in this year's line. It also is of standard bottle capacity.

Each member of the G-E beverage cooler line is sanitary, and needs no extra attention. Each is completely portable, ready to plug in. All are designed for use wherever bottled beverages are sold: drug and grocery stores, food markets, filling stations, bus stations, bowling alleys, billiard parlors, barbecues, cigar stores, tap rooms, clubs, factory stores, office buildings, theaters, and other similar establishments.

Models are styled in the modern manner by Ray Patten, industrial designer. The TM-33 and TM-34 are finished in a cardinal red motif, with chrome trim. The "Super-Service" TM-44 is finished in Cromwell green, with Polo green trim.

## G-E Beverage Cooler



"Super-Service" cooler holds up to 275 six-ounce bottles, or 240 twelve-ounce bottles. Cooling capacity is up to 100 six-ounce bottles per hour, according to room temperature.

Models TM-33 and 34 each hold up to 150 six-ounce bottles, with cooling capacity up to 56 bottles per hour, according to room temperature.

Dry storage compartments for all models are available at extra cost. Equipped with these compartments, the coolers may be used for storing packaged cheese, eggs, sandwich materials, milk, etc.

Coolers have smooth table tops, equipped with gliding quick-action openers requiring no lifting. Sliding rails are of chrome, for easier cleaning. Lids have twin rollers, and are easily removable for added convenience.

Cabinets are all-steel in construction, and joints are supported with box channel steel supports and cross-bars. A "non-settling" insulation is used. A heavy-duty galvanized steel grid serves as a support for bottles, and protects the cooling coils. Grid is rust-resisting, and its mesh construction prevents labels from steeling around the coils.

G-E's direct-expansion cooling coil, made of copper electro-tinned tubing in the form of a self-supporting zig-zag coil, covers the entire bottom of the tank. Coolers are powered by twin-cylinder "Scotch Giant" condensing units. Temperature control is convenient and readily accessible.

## Imperial Products for

BETTER WORK, GREATER SPEED, BIGGER PROFITS



### Imperial SYLPAK VALVES

have proved to be the practical answer to the valve problem



OUT of all the operating experience with so-called packless valves and valves with trick packings, has come a definite swing to Imperial Sylpak Valves. This valve, as shown by the accompanying sectional view, offers the double security of the sylphon plus a good spring-loaded packing. The brass forged body is non-porous, strong and uniform and has full size openings.

The Sylpak is a valve that stays tight under every operating condition . . . It stands up under pulsations, vibration, excess pressure and can be used with any refrigerant excepting ammonia.

Actual tests, made both in the Imperial engineering laboratory and by the Underwriters Laboratories have shown that these valves will withstand over 100,000 opening and closing operations. And even

in the event there should be an occasion to change a sylphon, this can be easily done with the Sylpak while the valve is under pressure.

Despite their special advantages and premium quality, these Imperial Sylpak Valves cost no more than ordinary packless valves. It is no wonder, therefore, that service men in constantly growing numbers are specifying these better designed and better made valves by name when ordering. Imperial Sylpak Valves have shown that they will meet every requirement of present day standards of air conditioning and refrigeration work.

These valves are available for tube diameters from  $\frac{1}{4}$ " to  $\frac{3}{4}$ " for S. A. E. or solder fittings as desired. Sylphon type valves can also be furnished in sizes up to  $1\frac{1}{2}$ " female I. P. T. and  $1\frac{3}{8}$ " O. D. tube size.



Imperial tools take all the grief out of tubing work



Imperial's Charging, Purging and Testing Devices eliminate many hazards

THE IMPERIAL BRASS MFG. CO., 565 S. Racine Ave., Chicago, Ill.



### JUST OUT!

A new 28 page condensed catalog on all Imperial products for refrigeration and air conditioning work. Will keep you up-to-date on your installation and service work. Illustrates, describes and lists hundreds of items, many of which are new. Mail the coupon for your copy.

THE IMPERIAL BRASS MFG. CO.  
565 S. Racine Ave., Chicago, Ill.  
Send me your new 28-page condensed catalog.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Jobber \_\_\_\_\_

# IMPERIAL Refrigeration and Air Conditioning Products

## Profitable Sales Ideas

### Paterson Dealers Aided By Newspapers In Drive

PATERSON, N. J.—A city-wide cooperative showing of electric refrigerators and appliances was launched April 8 by 14 dealers with a 10-page section in the Paterson Morning Call, local newspaper.

"A Well-Equipped Kitchen Leads to a Happy Home" and "Lighten Home Tasks Electrically" were slogans used by cooperating retailers.

Dealers participating in the drive included: Meyer Bros., Heat & Cold Equipment Co., Quackenbush's, Hygrade Electric Co., Inc., Public Service Co., Sears-Roebuck, Slater's, Bograd Bros., Barney's, Dixon Bros., Sussman & Bograd, Inc., H. M. Ash Co., Sachs Furniture Co., and S. & S. Furniture Co.

### \$78,146 Of Appliances Sold On 'Merriam' Day

SCHENECTADY, N. Y.—In a special "Merriam Day" drive staged recently for A. Wayne Merriam, Inc., local General Electric distributor, all divisions and departments of the company combined their efforts to accumulate a sales total of 431 appliances priced at \$78,146.37.

The sales total, which set a new one-day record for the distributor, was comprised of: 252 household refrigerators; 52 commercial refrigerating units; 50 electric ranges; 12 dishwashers; nine Disposals; 24 washers; five ironers; four water heaters, and 14 miscellaneous appliances.

Nine complete all-electric kitchens were included in sales for the day.



## PRESTO ICE TRAY



Surveys made among users of automatic refrigerators show, beyond question, that the greatest need for ice cubes is on frequent daily occasions—when they are wanted in a hurry—by one, two or three persons. And it's always time for Presto Tray when a few ice cubes are wanted—instantly, full-sized, cold and dry.

It's easy for your salesmen to demonstrate how—in a flash—the Magic Finish Presto Tray with rubber grid gives ice cubes as needed—one or a dozen—without fuss, bother or waste. Watch your prospects perk up and smile

understandingly as your salesman says—"Don't raid a trayful when you can reach for Presto Tray and get the exact number of ice cubes you want without disturbing the others. Only the Magic Finish Presto Tray with Rubber Grid gives you all the advantages of a fast-freezing, fast-releasing metal tray plus all the conveniences of a rubber grid."

Cash in on your prospects' recognition of the many occasions when only a few ice cubes are needed in a hurry—insist that your new refrigerators come factory-equipped with Magic Finish Presto Ice Trays.

INLAND MANUFACTURING DIVISION  
General Motors Corporation Dayton, Ohio

WHEN A FEW ICE CUBES ARE PLENTY... DON'T RAID A TRAYFUL... USE  
**PRESTO ICE TRAY** *with rubber grid*

### Electric Home Shown To Public By Grandson Of Buffalo Bill

WINSTON-SALEM, N. C.—Buffalo Bill's grandson is doing a smart sales promotion job for Bockock-Stroud Co., General Electric dealer here.

Through a special arrangement with Bockock-Stroud Co. and other firms which helped build and equip his newly constructed all-electric model home, H. S. Cody, local realty operator and grandson of the famous plainsman and Indian scout, is opening this home to the public for one month, commencing April 15.

Each company participating in the plan will be duly credited for its part in the home, and the all-electric kitchen will display the Bockock-Stroud name.

To advertise the public showing of the home and to boost the equipment which it installed, Bockock-Stroud Co. will include bill stuffers in its regular statements to customers and will employ newspaper advertising.

To introduce G-E's 1938 line of electric refrigerators and ranges, the B-S organization obtained the cooperation of two dozen local merchants in a promotion plan which offered approximately \$15 worth of merchandise and service to the first 75 people purchasing new refrigerators or ranges from Bockock-Stroud Co. during the month of March.

With each range or refrigerator purchased, customers were given credit slips which, when presented to the cooperating merchants, entitled the purchaser to the particular service or merchandise offered by each merchant.

In return for their participation, the merchants were given free space in all advertising with which Bockock-Stroud Co. promoted the campaign and the opportunity of acquiring 75 new customers.

Not forgetting the old standby of sales contests among retail salesmen of the dealership, the Bockock-Stroud organization now is engaged in a campaign (scheduled to run for the duration of April) featuring a pool in which each salesman is required to deposit 50 cents for every refrigerator, range, or water heater sale he makes during the month.

At the end of the month this pool will be split among the salesmen chalking up the greatest dollar volume for the month. Top man will receive half of the total amount in the pool and No. 2 will receive 30% of the total, while the remaining 20% will be awarded to the man placing third.

### Philadelphia Paper Conducts Electric Kitchen Contest

PHILADELPHIA—A model electric kitchen contest is being sponsored by the Philadelphia Record, daily newspaper, in connection with the Philadelphia electrical exposition being held here this week.

Prize awards of \$650 in cash and 50 electric percolators are offered for the most attractive, best designed model kitchens submitted in time for display at the exposition, which closes April 23.

**LINDERME**  
SEAMLESS TUBING  
Sealed  
AND  
Dehydrated  
**LINDERME**  
TUBE COMPANY  
CLEVELAND OHIO U.S.A.

### Draws Attention To Refrigerator's Size



To show visitors the spaciousness of a standard size refrigerator, an enterprising exhibitor at Milwaukee's recent Home Show had a young man occupy the interior of the box, which had been stripped of all its "insides." And, with the man equipped with a camera, the exhibit attracted much attention, especially from the fair sex, who saw a chance of having a picture taken.

### Home Demonstrations Only After Sale Is Made Plus Regular 'Clinics' Eliminate Reverts

OAKLAND, Calif.—At the Maxwell Hardware Co. here, home demonstrations on electrical appliances are made only after the merchandise has been sold.

The company's unusual policy in this matter is one of several important features of an unusual educational program which has greatly increased sales and practically eliminated reverts. Under this plan, high costs of maintaining outside salesmen have been eliminated. Volume was increased 25% between December, 1936, and December, 1937.

When a prospect asks for a home demonstration, she is told that indiscriminate demonstrating means an expense which the customer must pay for in one way or another, and that Maxwell's believes in saving money for its customers.

"We'll be glad to demonstrate the appliance fully here on the floor and to give you full instructions at home after you have made the purchase," the salesman continues. Real prospects hardly ever take exception to the plan. "Joyriders" are eliminated.

If the prospect wants more of a floor demonstration than the salesman gives her, she is invited to come in for one of the company's "clinics," which are held twice a week. Refrigerator clinics are held only during the selling season; with washers they are a year-around proposition. The "clinics" are widely advertised in the local shopping news, and salesmen telephone prospects and extend invitations.

In the laundry clinics, a specially trained demonstrator shows housewives how to handle difficult types of work on home ironers, and gives advice on washing problems—what supplies to use in washing different types of garments, how many rinses to use, and so on. The greatest interest has been shown in demonstrations on shirt ironing, ironing of small children's clothes, and the handling of expensive linen tablecloths.

The company has obtained a great many good prospects for other appliances through the ironing demonstrations. Women who had bought

machines elsewhere and weren't given full instructions come in to find out how to use them—and often buy a refrigerator or some other item.

In the refrigerator demonstrations, the girl shows how to prepare frozen desserts and various other dishes, and serves samples of what she prepares. The work is done right on the sales floor, so that she has a chance to talk to customers.

The home demonstrations made following receipt of a deposit on the appliance are handled according to the nature of the article. Since rather full instructions are needed on ironers, the company's "expert" gives an hour and a half lesson with every machine, offering to come back on call if she is needed. The washer demonstrations usually take only about an hour.

With refrigerators, it is merely a case of checking the installation to be sure a satisfactory temperature is being made, advising the customer where to keep different foods, and giving her a set of recipes.

"The psychology of demonstrating is entirely different when the sale has already been made than when the customer is merely a prospect," says Mrs. N. Griffin, who has been appliance buyer at Maxwell's for the last eight years.

"In the post-sale demonstration, the customer is seeking to learn all she can about the equipment. Before the sale, she's busy building up sales resistance and often doesn't pay attention to what is said.

"Demonstrations of the type we use also bring us a lot of prospects. The customer is glowing with the pride of ownership, and she's more than willing to tell her friends about us, and even furnish names.

"More instruction work is certainly needed on ironers—judging from the number of owners who come in for operating information. Our work along this line has saved us from having a single revert in the last two years. When a woman knows how to handle it, she won't give up her ironer."

**SERVEL**  
COMMERCIAL REFRIGERATION  
AND AIR CONDITIONING

Whether you need  
6 machines or  
6,000, Servel's engi-  
neers and factory  
staff will give you  
prompt, expert serv-  
ice. Write for details  
to Servel, Inc., Elec-  
tric Refrigeration  
and Air Condition-  
ing Division,  
Evansville, Indiana.

## THE COLD CANVASS

By B. T. Umor

(Concluded from Page 1, Column 1) Ford's services to the city and the country.

For the benefit of casual readers who believe that newspapers and trade publications speak favorably of Ford (and some other industrialists) only because of advertising, please note that neither the NEWS, nor its publisher, nor its editor, ever sold a nickel's worth of anything to Henry Ford or the Ford Motor Co. Haven't bought anything from them either, now that we come to think of it.

However, we do get some nice business from several subsidiaries of the General Motors Co. which is Ford's most aggressive competitor.

So if said casual reader can twist the foregoing remarks about Ford into something insidious he will have to be a damn good twister.

### If You Like Smelt Mr. Higley's Your Man

Back in 1912, some foresighted individual shipped some smelt eggs from Green Lake, Me., to Crystal Lake, Mich., on the theory that the fish hatched would become food for the land-locked salmon previously introduced into that lake. Smelt eggs had also been planted in the St. Mary's river as early as 1906 but it was not until 1919 that folks up in that country became aware that millions of smelt were filling the streams.

Now the annual spring smelt run has become a carnival, and a tourist attraction. Ansul Chemical Co., Marinette, Wis., is right in the center of the smelt region and during the past few years this company has made it a practice to ship boxes of fresh smelt, all nicely cleaned and properly iced, to its customers and friends.

H. V. Higley, secretary of the company, has informed us that the supply is unlimited and that they could furnish enough smelt to provide everybody in the industry but it is the cleaning job that puts a limit on their generosity.

Here's a tip: Make a note on your calendar to send Mr. Higley an order (maybe a nice letter will do) about the latter part of March next year.

### How About an Ironer For Pressing 'Em Out Flat?

General Electric home laundry equipment men thought they had something when they discovered that a fish farm in upper New York state was using a G-E washer to exercise trout, to keep them from getting fat.

They had something else, they thought, when a baker reported that he was using one of the washers to knead his dough. But if the most recent development is any indication, these happenings (like Cap'n Henry's radio spiels) are "only the Beginnin'."

For the Gimbel Mfg. Co., largest maker of potato chips in San Antonio, Tex., uses a G-E spin-basket washer for extracting water from the potato slices preparatory to cooking them into chips.

Spinner of the machine, says Owner Gus Gimbel, is used for extracting the water from the potatoes, and the tub for storing them until they are ready for cooking. The washer is used eight hours a day, six days a week, and Mr. Gimbel says he's been readying potato chips in it for about five years.

### SMOOTH RUNNING

#### Manhattan V-Belts

Manhattan V-Belts run smoothly...noislessly...endurably. Their better performance, longer life result from an exclusive design which welds the endless whipcord—completely floated in rubber—into a strong tension member and places it in the neutral axis area, with an extensible section above, a compression section below. Destructive internal heat is minimized, efficiency kept at the maximum.

THE MANHATTAN  
RUBBER MANUFACTURING DIV.  
of Raybestos-Manhattan, Inc.  
45 Townsend Street Passaic, N. J.

## Head New Company



J. S. FORBES



K. M. NEWCUM

### Superior Valve & Fittings New Pittsburgh Firm

(Concluded from Page 1, Column 4) of which 8,800 sq. ft. will be utilized for production purposes.

The newly formed company is said to be getting into production immediately on S.A.E. fittings and flare fittings, and is also planning to make diaphragm packless shut-off valves, manifolds, check valves, combination gauge sets, fusible metal plugs, compressor and receiver service valves.

Mr. Forbes, who states that he left Kerotest because of "a lifelong ambition to head my own company," had been with that firm since 1919, joining the organization upon his return from active service in France with the army during the World War.

He was successively assistant to the general manager, office manager, and assistant sales manager, being elected treasurer and a director of the company in 1923.

Mr. Forbes took a leading part in getting Kerotest into activity on brass valves and fittings for the refrigeration industry in 1927, and is generally given credit for a number of progressive merchandising ideas in the refrigeration parts industry, particularly with respect to his early recognition of the place for the independent refrigeration parts and supplies jobber.

He has been prominent in industry association and cooperative activity, being one of the organizers of the Refrigeration Supplies and Parts Manufacturers Association, of which group he is now vice president.

Mr. Newcum joined the staff of the NEWS as refrigeration service editor last June, after having written arti-

cles for the paper for a number of years. He is the author of the Master Refrigeration Service Manuals on household and commercial refrigeration.

To join the staff of the NEWS Mr. Newcum left a position as Kerotest representative in the eastern seaboard states, with offices in New York City. He was employed at Kerotest by Mr. Forbes, who says that Mr. Newcum was hired after he had written a letter criticizing a product which Kerotest was making at the time.

## Comfort Standards Code

### Is Prepared

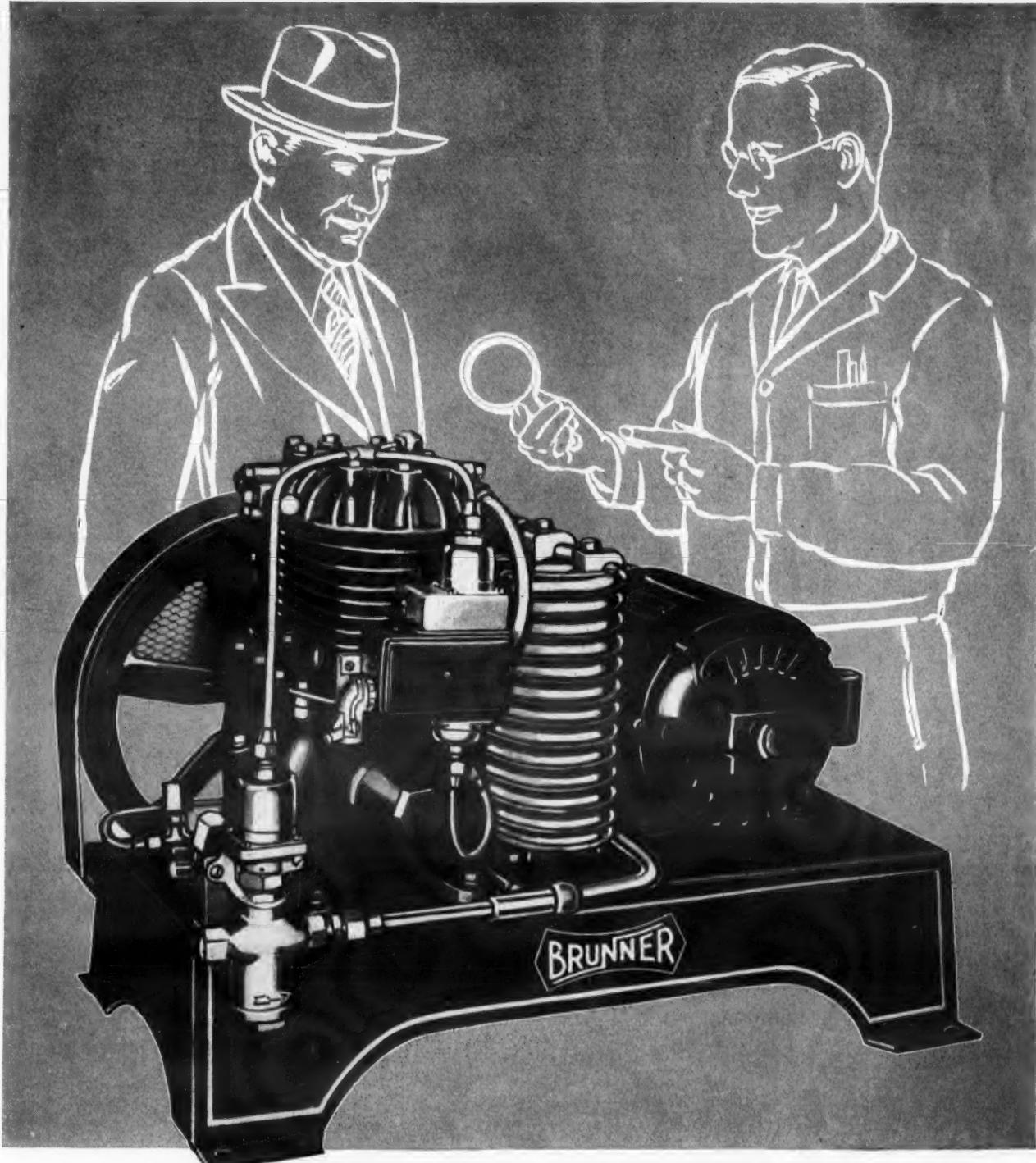
(Concluded from Page 1, Column 3) on the District's weather conditions, are included in the new standards, which also provide that air circulation must be such as to insure small variation from average readings.

A minimum of 10 c.f.m. of fresh, uncontaminated air must be provided each person, the minimum being

raised to 15 c.f.m. where food is served or where there is heavy smoking or objectionable odor.

In theaters, auditoriums, and similar buildings, air volume is to be based on a minimum of three fourths of the seating capacity.

In announcing the findings of the advisory committee, Dr. George C. Ruhland, District health officer, said that careless or uninformed operation of equipment is the major cause of undesirable ventilation and temperature conditions rather than the equipment itself.



## BRUNNER DESIGNS SURELY PROVE THE VALUE OF SIMPLICITY

Even in theory, the production of mechanical refrigeration is a complicated process, requiring a complicated mechanism. But complication often paves the way to trouble—especially in the field of practical mechanics. Guided by this belief, Brunner engineers have constantly striven to eliminate detail, combine functioning members, simplify. The 1938 Brunner Refrigerating Equipment accents this goal. Solidly constructed for exacting commercial service, Brunner units are marked by an absence of non-essentials. No excess baggage! The result: trouble-free refrigeration, quick-to-repair should the occasion ever arise. Let us bring you full information on the NEW Brunner line—air and water-cooled condensing units for every refrigerating and air conditioning requirement from 100 lbs. to 15 tons of refrigeration. Write: Brunner Manufacturing Co., Utica, N. Y., U. S. A.

IT'S **BRUNNER**  
FOR *economical* SERVICE

## AIR CONDITIONING & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office; Established 1926 and registered as Electric Refrigeration News

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## Most Useful Appliance

INJURIES to major league baseball players during the spring training, while to be deplored, often turn out to be disguised blessings. While the incapacitated star gives out interviews from the sidelines, some raw recruit gets his chance to come out of the born-to-blush-unseen class and surprises everybody but himself by looking like a second Ty Cobb.

A parallel might be drawn in the case of the appliance merchandising game. The league's leading hitter, the star of the game for the last 10 years, is the refrigerator. As the season gets under way, this big star was crippled by price cutters (who tried to chisel away his left leg).

One of these days the star will be back in there again, practically as good as ever. In the meantime the range is hitting the ball at a good clip. But how about giving that promising rookie, the dishwasher, the Big Chance?

### A Favorite With The Housewife

If you ask a woman who possesses a complete electric kitchen what appliance she considers the most useful, in a large majority of cases, she will answer the dishwasher. Surveys show definitely that washing the dishes is the most despised of all household tasks. And common experiences corroborates the surveys.

With an electric washer, one merely stacks the dirty dishes in a rack, turns on the hot water, and then forgets them. Swirling sprays of scalding water clean the dishes much better than human hands (which can't tolerate such hot water) can do. And the heat generated will dry the dishes after the washing and rinsing processes.

When so useful an appliance, one so badly needed, is available,

the question naturally arises as to why it isn't a leading seller. At the present time, there are only two manufacturers producing dishwashers, and but a small percentage of dealers selling them.

Prices are high, volume is low, promotion is nil. The dishwasher is in that stage of appliance merchandising development known as "pioneering." Until more of them get out into the hands of customers, say industry seers, progress will be slow.

### Answering Objection Of The Maid

Commonest objection to the dishwasher heard among dealers is that those who can afford to buy one can afford to have a maid. There are a number of answers to this objection, and good ones too.

First of all, the maid doesn't enjoy washing dishes any more than the housewife. And the home which boasts a dishwasher ranks at the very top of positions. Some families find that a dishwasher in the house reduces the ante on servant wages. All dishwasher owners report that for building goodwill and good feeling among the "help," the dishwasher is sure fire.

Second, there is a saving on china, for maids can't seem to help breaking and chipping the dinnerware. Third, the dishwasher frees the maid's time to do other tasks and to do regular chores better.

### Health Authorities

#### Give It Endorsement

Fourth and most important of all, the dishwasher kills bacteria, whereas old-fashioned washing-by-hand does not. Senator Royal S. Copeland has pointed out in his newspaper health column that: "Scientists have found as many as 50,000 bacteria on a supposedly clean dish. Bacteria in numbers as high as 25,000 have been found on a single spoon. Several million bacteria can be obtained from a single drop of dishwater. It is the belief of investigators that most of the water used to wash dishes is teeming with dangerous germs."

And Dr. James G. Cummings, chief of the U. S. Bureau of Preventable Diseases, declares: "Dishes and forks, knives and spoons washed in the usual way may become carriers of diseases that cause 30 to 45% of the deaths in the United States."

Now there is an argument which might almost be termed "terrific." It costs about one cent a day to operate an electric dishwasher... a penny a day keeps the doctor away.

### 'Beauty Preservation'

#### Makes Topnotch Appeal

Next to health comes beauty. Here is the topmost argument when selling a dishwasher to a housewife who does her own work. What warm, greasy dishwater does to the hands is well known. What it does to the face—fretting and unsunny dispositions leave lines, wrinkles, and that aged appearance—is even more drastic. Money "saved" by not buying a dishwasher is thrown back threefold to the beauty parlors.

The dishwasher (1) helps solve the servant problem; (2) protects health and helps prevent the spread of communicable diseases; (3) saves hands, checks wrinkles, and postpones the ravages of age on beauty; (4) adds to leisure,

## 'Scotch Eskimo' Carries Fight For Electric Refrigeration

"I cost you 30% LESS...I give you MORE!"

I am modern

Electric Cold

THE SCOTCH-ESKIMO!"



"Sure... that's a pretty big claim, Mrs. New York. But I can back it up!

"Right here in New York, a series of scientific tests have just been completed. Tests in normal rooms. Warm rooms. Hot rooms. Those tests prove beyond a shadow of doubt that I save you 30%... or more... and give you proper refrigeration every day of the year.

"Today, I'm far and away the most efficient and economical refrigeration ever produced. My electrical efficiency has increased more than 100% in the last few years. Meanwhile, electric rates in New York have gone down, down, down.

"That's why I cost you less, Mrs. New York. And this is why I give you more...



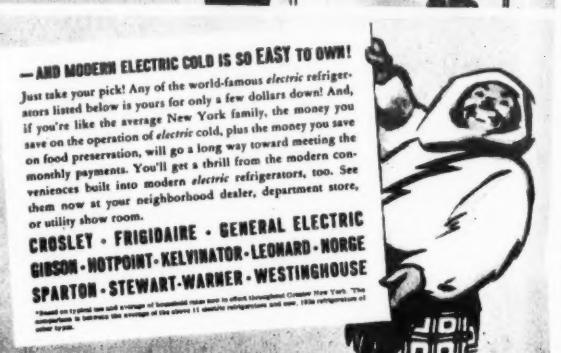
"You want SAFE REFRIGERATION, Mrs. New York? Well, I am IT... the safest in the world, as well as the MOST ECONOMICAL. I automatically keep my temperature well below the danger point, even in 90 to 100 degree weather! Meat, milk and vegetables stay fresh and appetizing. And you stay as serene as a June night... for you never have to worry about me!"



"FASTER FREEZING? Well, I should say! Madam, it takes electricity to turn out ice cubes by the wholesale the way I do. I keep up with any party easily... and at LOWER COST. And the record time in which I give you salads and frozen desserts fairly takes your breath away! Fast? Indeed I am! Just keep your eye on the clock when modern electric cold goes to work. You'll see!"



"And I am SIMPLICITY itself! You don't have to be a graduate engineer to have me around. Like all things electrical, I am clean, modern and dependable. I COST LESS TO OPERATE... and less to own. Installing me is as simple as connecting your electric iron. When I come into your kitchen, refrigeration worries go out of your mind!"



"—AND MODERN ELECTRIC COLD IS SO EASY TO OWN! Just take your pick! Any of the world-famous electric refrigerators listed below costs for only a few dollars down! And, if you're like the average New York family, the money you save on the operation of electric cold, plus the money you save on food preservation, will go a long way toward meeting the monthly payments. You'll get a thrill from the modern conveniences built into modern electric refrigerators, too. See them now at your neighborhood dealer, department store, or utility room.

CROSLEY • FRIGIDAIRE • GENERAL ELECTRIC  
GINSON • NOTPOINT • KELVINATOR • LEONARD • NORGE  
SPARTON • STURT • WARNER • WESTINGHOUSE

## MODERN Electric REFRIGERATORS

COST 30% LESS TO OPERATE THAN ANY OTHER KIND

SO SAFE ... SO SWIFT ... SO SIMPLE

In an intensive three months' campaign sponsored by the Refrigerator Association of New York (an organization of distributors) to sell the merits of electric refrigeration over all other types of food preservation, a new character in the person of a "Scotch Eskimo" is the central figure in the extensive newspaper advertising which is being used. The "Scotch Eskimo" is described as being "as thrifty as a Highlander and as cold as an Arctic night." The cartoon-type copy has the character explaining the key themes of the campaign, one of the advertisements (as shown here) being devoted exclusively to an appeal to the housewife.

increases happiness, improves dispositions.

All in all it's a mighty good investment. At the outset, dealers can figure that the dishwasher is something every family will want when they see it demonstrated. But they will say that they can't afford it. It is up to the dealer to help them to justify their purchase of the Most Useful Appliance in their own eyes. By elaboration of some of the arguments briefed in the foregoing paragraphs the dealer should be off to a good start.

If customers aren't fighting to get into showrooms, if the chiselers have taken all the profit out of business, why not get a new interest in life by taking on a line of dishwashers and selling them?

Here's virgin field, a marvelous product—both awaiting intelligent promotion. The time may be ripe for the dishwasher to emerge from the pioneering stage into the profitable volume selling stage. Good dealers and good promotion can do it.

## LETTERS

### He Has Suggestion For The Editorial Columns

Halectric Laboratories  
1793 Lakeview Rd., Cleveland

Editor:

Might we make one suggestion to the News? Perhaps other readers use its columns for a source of mailing list material as we do, and if the complete address of firms mentioned in the different news articles were given when ever possible, it would make your paper even more valuable.

A LEATHERMAN

### Status Of Specifications On Commercial Units

McCray Refrigerator Co.  
Kendallville, Ind.

Sirs:

Are you planning on running a comparison of condensing unit specifications as you have done in previous years?

We are very much interested in getting this information if it is available. If not readily available, kindly advise in what issue it will be run.

G. K. BENTLY,  
Asst. Refrigeration Engineer.

Answer: Last time that we published specifications of commercial refrigeration condensing units was in the May 6, 1936, issue of AIR CONDITIONING & REFRIGERATION NEWS.

Because of the fact that the major manufacturers of commercial units have agreed among themselves not to give out any specifications information, we are not able to furnish more recent information.

### 'Demonstrate the Unit' Roper Suggests

Pleasantaire Corp.  
Washington, D. C.

Editor:

We read your editorial in the March 30 issue with a great deal of interest and agree very heartily that Fortune's survey was hastily done. Fact of the matter is that all who have had experience in room-cooling merchandising know that you can't sell the merchandise in quantity unless you make short demonstrations on prospect's own premises. Certainly, you can't expect the public to show a willingness to buy a new appliance of this type when they have no idea of what it is and what hot weather relief it can provide.

We have sold the Lexington hotel three Pleasantaires and hope to have at least 50 more installed before the close of summer. New York hotels are thinking more and more about air conditioning because of the World's Fair opening next year.

RICHARD F. ROPER,

## Range Sales & Attendance At Campaign Meetings Will Mean Lake Cruises To Cleveland Salesmen

CLEVELAND—Based on a cooperative sales and advertising plan prepared by the Electrical League of Cleveland, a spring and summer electric range promotion campaign is being conducted by local dealer-members of the league.

As part of the drive, a special range sales contest for dealers and salesmen has been arranged by the league and will extend until July 31. Open to any electric range dealer selling league-approved ranges, and to such dealers' salesmen, the contest is being conducted on a point-score basis, and any contestant accumulating a total of 300 points wins his passage on a seven-day cruise around the Great Lakes.

Special prize awards and other extra awards will be presented to all who qualify for the cruise. All awards are in addition to the usual sales commissions and bonuses.

Not less than 250 points must be made in range sales by each contestant. A sales coupon will be issued to every electric range dealer and salesman for each approved range he sells during the contest. Each coupon has a value of 10 points.

Additional points may be won by attending breakfast meetings and satisfactorily completing any sales-training classes conducted by the League.

The League is staging a series of eight breakfast meetings during the campaign, with guest speakers selected from prominent men in the electric range field. Every contestant is credited with 10 points for each breakfast meeting he attends. He also is credited with 10 points for completing a sales training course. Sales classes are held in the League

## General Electric's Building In Los Angeles Offers 'Everything Electrically'

LOS ANGELES—Housing the offices, warehouses, salesrooms, and service departments of the local branches of General Electric Co., General Electric Supply Corp., and General Electric Contracts Corp., the new General Electric building here provides customers with the convenience of attending to all their electrical needs in one place.

Building is three stories high, of modernistic design, and is constructed so that three additional floors may be built in the future.

One of the two main entrances leads into the G-E Supply Corp. store and counter service section, and a stairway leads to the offices and showroom on the second floor. Appliance repair department is adjacent to the first floor counter section.

Displays of household appliances, featuring a model electric kitchen, are exhibited in the showrooms on the second floor.

Total connected electricity load for the building is 1,189 kw., equivalent to that needed for an average town of 5,000 population.

Indirect lighting is installed in all offices and display rooms. Direct lighting is employed in the warehouse. Air and water-heating systems are 100% electric.

Air heating is furnished by about 100 G-E "in the wall" fan-type forced convection heaters, ranging in size from two to four kw.

Each heater has its individual thermostat for automatic temperature control. Desired room temperature is said to be maintained with not more than 1° F. difference between ceiling and floor.

On the third floor is a large conference room, in which is set up a completely equipped modern electric working kitchen. A portable stage for sales and dealer meetings is provided, and the large room may be transformed into three smaller rooms by means of accordion-type doors. Total seating capacity of the conference room is about 275.

## Dry-Kold Co. Makes 5% Payment

NILES, Mich.—The Dry-Kold Refrigerator Co., defunct manufacturer of commercial refrigerators, paid a dividend of 5% to its creditors last month, and has informed attorneys that another 5% dividend may be available within the next few months.

## Westinghouse Shifts Executive Personnel

EAST PITTSBURGH, Pa.—Assignment of new duties to five officials of Westinghouse Electric & Mfg. Co. has been announced by George H. Bucher, president.

Ralph Kelly, vice president, has been placed in charge of sales for the company, with headquarters in the Pittsburgh executive offices. Mr. Kelly formerly was in charge of the Pittsburgh district works.

R. B. Mildon, vice president, now manager of the East Pittsburgh division, formerly had charge of the steam and stoker departments in Philadelphia.

N. G. Symonds, vice president, will devote his time in the sales department to specific customer activities, association work, and special assigned duties.

Mr. Mildon is succeeded as manager of the steam and stoker division by Roy A. McCarty, former manager of the small motor division at Lima, Ohio. Mr. McCarty is in turn succeeded by B. H. Lytle, a division manager in East Pittsburgh.

## Buffalo League Holds Spring Showings

BUFFALO—Second annual electric range show, sponsored by the Electrical League of the Niagara Frontier, was held in the Electric building here April 4 to 10. The League's annual electric refrigerator show is scheduled to be held during the first week in May.

## REFRIGERATORS INSULATED WITH

# Armstrong-Corning WOOL HAVE AN ADDED SALES ADVANTAGE!



BOHN REFRIGERATORS being insulated with Armstrong-Corning Wool veneer fold bats at the plant in Baltimore, Md.

YOUR good name as a manufacturer helps sell the cabinets you build. If those cabinets are insulated with Armstrong-Corning Wool, they have the added advantage of two more good names.

For your prospects know Armstrong—they have seen the national advertisements of Armstrong's Linoleum and know that the name stands for high quality in resilient floor coverings. And they know Corning as the maker of famous Pyrex Glassware—standard of the nation.

This extra selling advantage is only one of the reasons why Armstrong-

Corning Wool is being increasingly selected by refrigerator manufacturers. Its low coefficient of thermal conductivity, and its permanent resistance to moisture, help to build long, efficient life into cabinets. In production, it is easily handled. It fits snugly against the crock, and the extreme resilience of this fibrous glass material causes it to expand and fill all available space.

Armstrong-Corning Wool combines light weight with economy and long life. It is made from molten minerals, spun into fine, soft threads. It is inorganic and has all the valuable chemical character-

istics and the permanence of glass.

In addition to Armstrong-Corning Wool, Armstrong offers two other high quality insulating materials: Armstrong's LK Corkboard, especially suited for severe service and low temperatures; and Armstrong's Temlok, a rigid fibreboard that is strong, efficient, and space-saving. These three materials offer a range of selection that can furnish just the right insulation for the type of cabinet you build. Write for further details to Armstrong Cork Products Co., Building Materials Div., 1002 Concord St., Lancaster, Pa.



## Armstrong's EQUIPMENT INSULATION

LK CORKBOARD ~ TEMLOK INSULATION ~ ARMSTRONG-CORNING WOOL INSULATION

# Service Methods

## New Vacuum Dehydrator For Cleaning & Drying Refrigeration Systems Operates From Water Pressure In Ordinary Tap

BY K. M. NEWCUM

HOW the water pressure from a standard water faucet may be utilized for cleaning, dehydrating, and evacuating a refrigeration system in the field, by means of the "vacuum dehydrator" now being supplied by the American Injector Co. of Detroit is explained in this article.

The vacuum dehydrator consists of a "Vacuumator" ("B" in Fig. 1) connected by means of a rubber hose "D" to a check valve "A." The Vacuumator is screwed onto a water faucet (base bib).

With the water turned on full force the water flowing through the Vacuumator draws a vacuum of approximately 28 inches of mercury at the point where the hose "D" is connected. The ejector principle used is somewhat similar to that used in steam jet refrigeration systems.

The rubber hose "D" is used merely to extend the vacuum to the refrigeration system.

Check valve "A" is used to preclude the possibility of water backing up into the part of the refrigeration system being cleaned, evacuated, or dried.

Service dehydrator "C" is used to dry the air which is being circulated through the system during the dehydrating process.

Principal uses of the vacuum dehydrator are: (1) to clean the system by flushing it out with carbon tetrachloride or some other cleaning fluid; (2) to dehydrate the coils and tubing of a refrigeration system by drawing warm dry air through the system; (3) to evacuate the system prior to admitting the refrigerant.

Following are step-by-step instructions for the use of the vacuum dehydrator which, according to American Injector officials, will re-

sult in the highest degree of success in its use:

### CLEANING THE SYSTEM

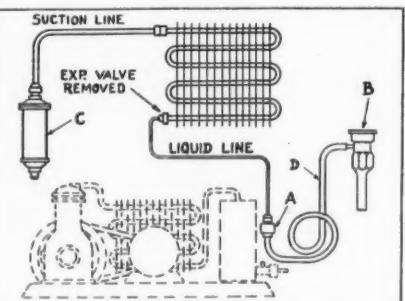
The procedure recommended for cleaning a refrigeration system is as follows: 1. the evaporator system should be cleaned separately from the condenser system and only one should be cleaned at a time. In multiple systems, all evaporator circuits should be disconnected and cleaned and dehydrated one at a time.

### EVAPORATOR SYSTEM

a. Disconnect suction line at compressor suction side service valve as in Fig. 1.

b. Disconnect liquid line at service

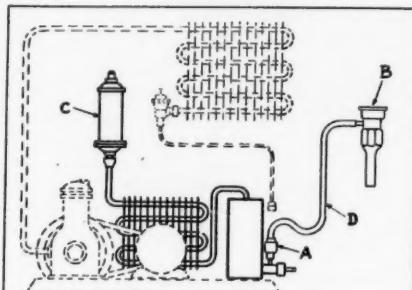
### Fig. 1—Cleaning & Drying Coils



valve on liquid receiver as in Fig. 1.

c. Remove expansion valve and connect liquid line direct to evaporator. Expansion valve should be cleaned separately or replaced, as

### Fig. 2—Cleaning Condenser



Connections for cleaning and dehydrating condensers.

usually a dirty system will so clog this valve as to make it impossible to clean without being taken apart.

d. To Clean: Connect check valve ("A" Fig. 1) to liquid line. Connect vacuumator ("B" Fig. 1) to water faucet. Turn on the water full flow and the resulting suction will draw air through the system.

Place about one-half pint of carbon tetrachloride or other cleaning fluid in a small can or jar. Hold this at the open end of the suction line so that it may be drawn into the system. After this cleaning fluid has all entered the system, place the thumb over the open end of the suction line until a vacuum is felt, then snap the thumb away. Repeat this four or five times. This will cause a scouring action in the cleaning fluid which will help it to clean more effectively.

Repeat this whole process with a clean supply of fluid one or more times depending upon how dirty the system is. The evaporator system is now cleaned and is ready to be dehydrated.

e. To Dehydrate: With the vacuumator still operating, connect one end of the dehydrator to the open end of the suction line ("C" Fig. 1) leaving the other end of dehydrator sealed or connected to a compound gauge to check the vacuum. With a torch start heating the system at the dehydrator. Heat until it is uncomfortable to touch (about 180° F.) and proceed to heat progressively along the suction line, evaporator, and liquid line.

Do not apply heat to check valve, expansion valve, or thermo bulb.

This heating under vacuum will evaporate all the moisture in the system. The seal cap or gauge should then be removed from the dehydrator to allow hot dry air to be flushed through the system.

Heat should be applied to the dehydrator during this process which should be continued for five minutes or so and the hot dry air thus drawn through the system will remove all traces of vapor and leave system thoroughly dehydrated.

f. On multiple systems treat each evaporator as a separate system. Attach check valve at open end of liquid line and dehydrator at open end of suction line and close valves leading to other systems or plug open lines to make one continuous circuit through the evaporator to be treated.

### CONDENSER SYSTEM

a. Disconnect condenser tubing at discharge valve on compressor as in Fig. 2.

b. Connect check valve of vacuum dehydrator ("A" Fig. 2) to service valve on liquid receiver.

c. To Clean: Hold cleaning fluid at open end of condenser tubing and proceed as directed for evaporator system.

d. To Dehydrate: Connect dehydrator to open end of condenser tubing ("C" Fig. 2) and proceed as directed for evaporator system, except when applying heat start at dehydrator and progress through condenser to liquid receiver.

### EVACUATING SYSTEM

After cleaning and dehydrating, the system should be connected up again to a clean compressor. The entire

### Development Of the Vacuum Dehydrator Idea

**Editor's Note:** An article headlined "Westinghouse Records Demonstrate that Forcing Hot, Dry Air Through System Is Best Dehydrating Method, Even in Field," which appeared on page 13 of the March 16 issue of the News discussed a method of dehydrating and evacuating the coils, tubing, manifolds, and other parts of a commercial refrigeration system prior to admitting the refrigerant to these parts.

The article also pointed out the importance of dehydrating a new job with the resultant decrease in service problems when such a procedure is followed.

In the March 23 issue of the News was published a second article dealing with the problem of cleaning the products of sulphuric acid (corrosion) from the tubing coils and other parts of a commercial system on the job and finally dehydrating and evacuating the system by the method described in the March 16 issue article.

That all parts of the system, except the condensing unit, should be thoroughly dehydrated before refrigerant is admitted is agreed to by most refrigeration engineers. Westinghouse refrigeration engineers have taken the lead in promoting the idea of pre-drying and also, according to information available, have taken the lead in providing equipment and a method for cleaning dirty  $\text{SO}_2$  jobs in the field.

The Westinghouse method of pre-drying and cleaning anticipated the use of a pressure-vacuum pump, which is made up at the factory in small quantities for use of Westinghouse dealers. The approximate cost is \$46.00 per unit.

Westinghouse engineers have compiled records to substantiate the fact that pre-drying reduces service calls and that dirty  $\text{SO}_2$  jobs can be successfully cleaned

to allow hot dry air to be flushed through the system.

Heat should be applied to the dehydrator during this process which should be continued for five minutes or so and the hot dry air thus drawn through the system will remove all traces of vapor and leave system thoroughly dehydrated.

f. On multiple systems treat each evaporator as a separate system. Attach check valve at open end of liquid line and dehydrator at open end of suction line and close valves leading to other systems or plug open lines to make one continuous circuit through the evaporator to be treated.

### CONDENSER SYSTEM

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### EVACUATING SYSTEM

After cleaning and dehydrating, the system should be connected up again to a clean compressor. The entire

in the field. They claim their big difficulty has been in persuading their dealers and service contractors to (1) purchase a \$46.00 unit and (2) to get them to use it on each job because of its weight and bulk.

A small, lightweight, and inexpensive unit for performing these two important operations would seem the thing necessary to give impetus to pre-drying operations, and the cleaning of dirty jobs, which, in turn, should reduce service problems.

Made cognizant of the need for such a unit by the two articles in the News, American Injector Co., manufacturer of ejectors and refrigeration accessories, performed a series of experiments to determine if a standard water-operated ejector would not satisfactorily supply (1) a circulation of air through the system for drying by means of passing dry, hot air through the system; and (2) drawing a vacuum (around 29 inches) necessary for evacuating after dehydrating; and (3) to circulate carbon tetrachloride through the dirty tubing and coil system and condenser and receiver, for cleaning.

Experiments performed showed that the ejector, when connected to the ordinary water faucet (base bib) pulled a 29-inch plus vacuum on the system very rapidly; (2) successfully circulated carbon tetrachloride through the system; and (3) caused sufficient movement of air through a dehydrator and the tubing and coils to permit drying by heating of these parts.

American Injector Co. is now making available a kit known as the "Vacuumator" which contains the ejectors, 20 feet of rubber hose, a check valve, and a service dehydrator, assembled into a unit for performing the pre-drying, cleaning, and evacuating operations on the job.

system may then be evacuated by connecting the check valve connection of the vacuum dehydrator to the service valve on the compressor just as you would connect a vacuum pump. Leave the water running full flow until all the air has been evacuated from the system.

**GENERAL INSTRUCTIONS**

It is advisable to hold thumb over check valve connection with water running before connecting up to system to be sure you are pulling a vacuum up to that point. If there is no vacuum there, check for hose leaks and check tightness of connection to water faucet.

After this check, if vacuum in this line has been established and it is connected to system and no vacuum is pulled, then check all connections to find leak. If there is a leak anywhere in the system it will lower or completely destroy vacuum.

If an inflammable cleaning fluid is used, great care should be exercised to eliminate fire hazards when applying torch. The dirt removed from the system goes with the cleaning fluid down the drain with the water used to operate the vacuum dehydrator.

Cleaning must be done without the dehydrator in the line as drawing the cleaning fluid through the dehydrator will spoil the activated alumina.

### CARE OF VACUUM DEHYDRATOR

Immediately after using, connect the suction end of the hose to the dehydrator and screw seal cap tightly on other end of dehydrator, and with the vacuumator in operation, heat the dehydrator with the torch to a temperature of 350° F.

This will reactivate the alumina charge in the dehydrator, drive off any moisture that has accumulated in it, and with the seal caps replaced on the dehydrator connection, it will be ready to use on the next job.

The charge in the dehydrator may be easily and quickly renewed when necessary and this need only be done at long intervals if the dehydrator is heated and reactivated after each use.

### EACH CYLINDER THOROUGHLY ANALYZED

A sample is taken from each cylinder of Ansul Sulphur Dioxide and Methyl chloride and thoroughly tested and analyzed. The results of these analyses are recorded on tags and attached to the cylinder valves. No cylinder leaves without this tag. It is your guarantee that the refrigerant therein is as perfect as present day chemistry and modern methods can make it.

Ask for Ansul. Warehouse stocks of complete cylinder sizes are maintained in all principal cities throughout the nation. One is near you. Write for the address.

**ANSUL**  
CHEMICAL COMPANY  
Marinette, Wisconsin

### OIL SEPARATORS

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G. & S. TOOL & MFG. CO.  
8790 Grinnell Detroit, Mich.

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FOR ALL TYPES OF  
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WRITE TO  
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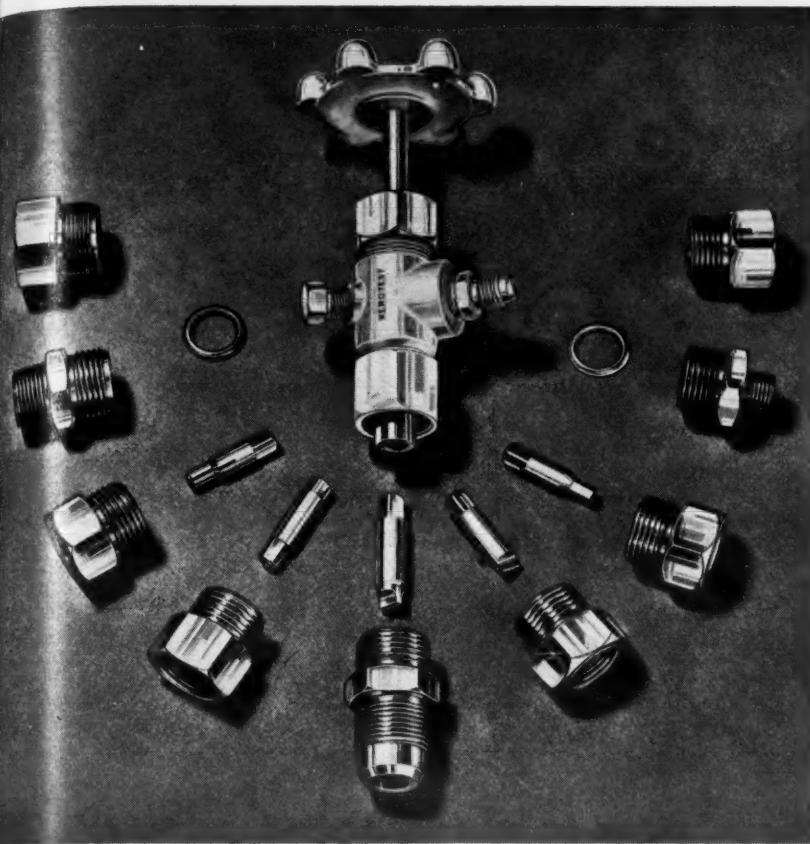
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### SPECIALISTS IN DEVELOPING PRODUCTS FOR DIFFICULT INSTALLATIONS

GR-LIPMAN  
COMMERCIAL REFRIGERATION

Send your problem to GR-Lipman engineers for their recommendations.  
**GENERAL REFRIGERATION CORPORATION**  
Dept. F-1, Beloit, Wisconsin, U.S.A.

## For Servicing Hermetics



### Kerotest Set Designed To Aid Servicing Of Various Hermetic Units

PITTSBURGH, Pa.—Just introduced by Kerotest Mfg. Co. is a master purging and charging valve set designed to fit practically all makes of hermetic refrigeration units.

This new set contains the operating valve, adapters, and stem extensions for servicing various makes of hermetically sealed units, thus making it unnecessary for the service man to carry a separate valve for each unit.

Adapters and stem extensions are plainly marked, and the label inside the box shows which adapter to use with each of the various units. The set is packed in a convenient box to facilitate the service man's carrying it.

The master valve is furnished with a handle, eliminating need of a wrench and the possibility of damaging the stem square. A gauge connection, independent of the service connection, is also included in its construction.

To use the set, the sealing plug is first removed from the hermetic unit. The correct adapter is attached and the stem extension inserted if needed. The operating valve is then attached to the adapter and the unit may be charged, purged, etc.

The Kerotest universal set may be used on any of the following hermetic units: Westinghouse (large and small float); U. S. Radio & Televi-

sion; Bohn SO<sub>2</sub> and methyl chloride; Coldspot; Trukold; Gibson; Grunow; Spartan; Crosley; Airtemp; Frigidaire (high side float); General Electric (junior and standard); and Hotpoint (late models).

### Reduced Drilling Time Is Claimed For New Drill

DETROIT—Production of a new drill known as the Carboly flat drill, designed to reduce drilling time at least 50% in all types of non-metallic construction materials, has been announced by Carboly Co., Inc., subsidiary of General Electric Co.

Cutting edge of the drill is made of Carboly cemented carbide, said to be almost as hard as diamonds. The drill may be used in portable electric drills and hand braces.

It is intended especially for use by electricians, plumbers, general contractors, sign hangers, building maintenance men, and others engaged in similar work entailing the installation of wiring, piping anchors, etc.

**PROFIT-MAKER DELUXE!**

There's no competition in the high-quality class for this 1938 ALLISON AIR CONDITIONER! Read the features below and be amazed at the \$260 list price. Exceptionally attractive discounts. Write or wire for details today!

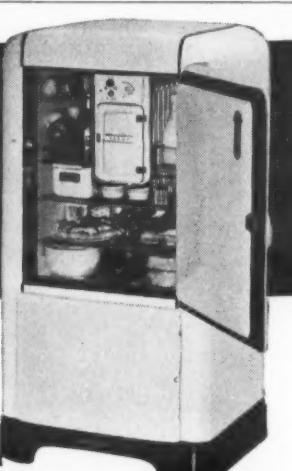
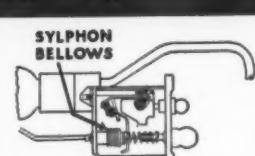
**Allison Air-Conditioner Features**

- Self-Contained Air Conditioning Unit
- 1 Ton Capacity
- Water Cooled
- Finest Construction
- Johns-Manville Insulation
- Vibration Free
- Directional Flow
- Genuine Walnut Cabinet
- Cools, Filters, De-Humidifies

W. D. ALLISON COMPANY, Indianapolis, Ind.

## NORGE uses SYLPHON BELLows

in Thermostat Controls



Norge—the refrigerator "that goes 'round and 'round"—provides the same characteristic simplicity and dependability in its thermostat control.

Here, a Syphon Bellows—the metal diaphragm that has withstood 300 million flexings without noticeable fatigue—is on the job to provide faultless service throughout the life of the refrigerator.

This seamless, jointless, Syphon metal Bellows, originated and pioneered by Fulton Syphon Company 35 years ago, has been the subject of more research and development in manufacture and application than any other product of its kind in existence.

Avail yourself of this plus value that costs you nothing—that may pay you well in product acceptance and good will. Ask for Bulletin No. HO-121.

**The Fulton Syphon Co.**  
KNOXVILLE, TENNESSEE

## 'Box' Deodorizer Available For Household Models

ARLINGTON, N. J.—Emeloid Co., Inc., manufacturer of celluloid and metal specialties, is producing the "Odo-Rid," an air filter device intended for use in refrigerators or ice boxes, which may be used by dealers as a gift offer to attract prospects.

The Odo-Rid is a small cylinder containing activated carbon through which passes the air circulating within the refrigerator or ice box. Food odors and gases in the air are absorbed by the activated carbon.

Normally, the Odo-Rid remains effective for six months. Attached to the outside of the accessory is a small temperature gauge marked in three zones indicating whether the food is in danger of spoiling, is in a safe cold range, or is in the freezing zone.

The Odo-Rid is being sold by department stores and the F. W. Woolworth chain. Wholesale price is 16 cents each in quantities.

### Stains Talks On Valves To Oklahoma City Group

OKLAHOMA CITY, Okla.—W. A. Stains, sales engineer of Alco Valve Co., St. Louis, was guest speaker at a meeting of about 50 air-conditioning and service engineers held here recently by Mideke Supply Co.

Mr. Stains spoke on the automatic control of refrigeration, explaining the operation of the "Thermo" valve and illustrating his talk with slides and a glass evaporator.

## Frank Riley Opens Own Factory In Detroit

(Concluded from Page 1, Column 3)

A man of wide experience and background in the refrigeration industry, Mr. Riley during and immediately following the World War was engaged in the manufacture of ammonia refrigerating machines.

He joined Kelvinator in 1923, and during that and the following year organized the company's ice cream cabinet division. During the years 1925 and 1926, he was with Servel, where he organized the company's commercial refrigeration division, with headquarters in New York City.

From 1926 to 1932, Mr. Riley was manufacturer's agent representing Feeders Mfg. Co.; from 1927 to 1933 he also was manufacturer's agent for Automatic Reclosing Circuit Breaker Co. (now Ranco, Inc.); and from 1928 to the present time he has been representative for Clifford Mfg. Co.

In 1934, Mr. Riley joined American Injector Co. here in a sales and engineering capacity. He relinquished that post in setting up his own manufacturing organization.

### Allen-Bradley Co. Moves St. Louis Offices

ST. LOUIS—Local office of the Allen-Bradley Co., manufacturer of motor control equipment, has been moved to 404 N. 17th St., G. W. Schalchlin, district manager, has announced.

## Engineers To Investigate Radiant Heat For Homes

(Concluded from Page 1, Column 3)

existing data with a view to defining more easily the physiological aspects of supplying more or less heat to the body by direct radiation, and to determine the degree and range of comfort experienced by persons subject to radiant heat.

The committee also will interpret research laboratory data resulting from studies made at Yale under Prof. C. E. A. Winslow, and at the University of Cincinnati under Dr. C. A. Mills and others. Broad objective is to supplement previous research in comfort air conditioning with similar studies on radiant heat.

Members of the committee, to be known as the technical advisory committee on radiation and comfort, include: A. A. Adler, consulting engineer; A. H. Barker, consulting engineer, London; W. D. Fleming, major, Army Medical Center, Washington, D. C.; R. F. James, Westinghouse Electric & Mfg. Co., Bloomfield, N. J.; Dr. C. A. Mills, professor of experimental medicine, University of Cincinnati; D. W. Nelson, assistant professor of steam and gas engineering, University of Wisconsin; W. R. Rhoton, consulting engineer, Cleveland; W. W. Timmis, manager, air-conditioning department, American Radiator Co.; G. R. Wait, Carnegie Institute, Washington, D. C.; S. L. Warren, department of radiology, University of Rochester; C. E. A. Winslow, professor of public health, Yale university; and C. F. Wood, Delco-Frigidaire, Dayton, Ohio.

## WHEN YOU ASK AN ENGINEER ABOUT VALES

WARREN W. FARR

**FARR REFRIGERATION SERVICE Inc.**

LAKWOOD, OHIO



Products are favorites with us. They have proven to be one hundred per cent in performance and practically free of service."



Valves are helping us to build a large group of satisfied customers, which is so important to every business today.

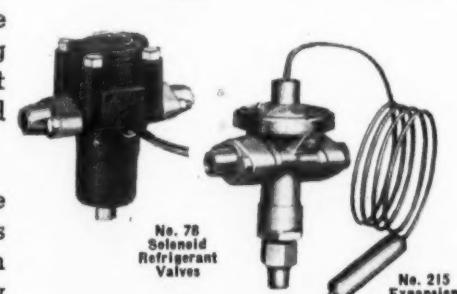
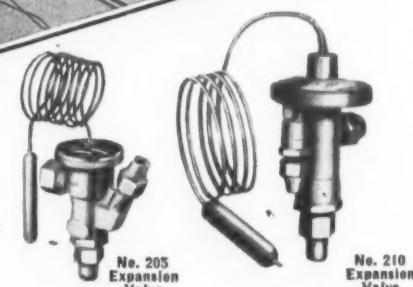
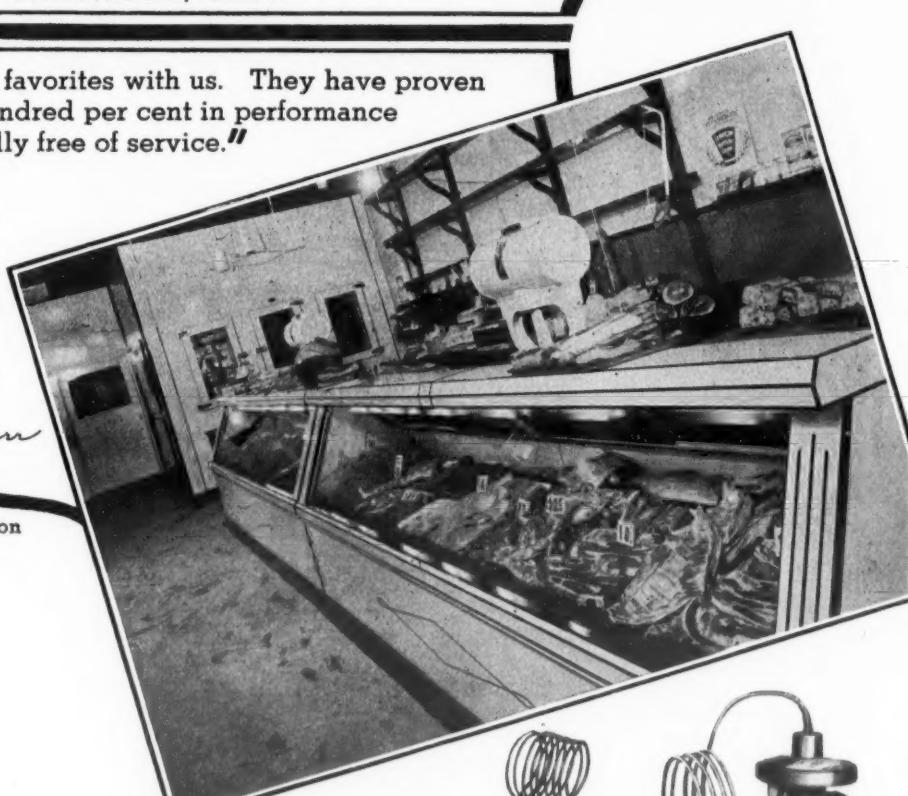
Warren W. Farr

A typical FARR Installation  
Taylor Market, Inc.  
Cleveland, Ohio

Cases and Cooler  
Schwenger Klein, Inc.  
Cleveland, Ohio

Condensing Unit  
Brunner Mfg. Co.

Valves   
Purchased through  
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THE BYWORD FOR A-P VALVES

# Air Conditioning

## Air Conditioning With Mechanical Cooling Used In 140 Buses Of the Interstate Lines

KANSAS CITY, Mo.—The world's first fleet of air-conditioned buses is now in regular service from Chicago and Kansas City to the Pacific Coast. The Interstate Transit Lines (Chicago and North Western Stages and Union Pacific Stages) have equipped 140 buses with year-around air conditioning similar to that used in modern business buildings.

Cooling equipment is already in service on the route between Los Angeles and Salt Lake City, and buses on other main line routes will be comfort cooled as fast as hot weather arrives in those territories.

### COMPLETE CONDITIONING

Cooling, however, is only one function performed by the bus air-conditioning system. It also filters, deodorizes, dehumidifies, and circulates the air. During the winter, the air is heated instead of cooled. Thus the new system meets all the requirements of true air conditioning.

Two filters are employed in the bus system. One removes dust, dirt, and pollen, affording quick relief to sufferers from hay fever, and keeping clothes clean and fresh. The second filter removes all odors.

Temperature inside the bus is regulated automatically by thermostatic control. The air inside the coach is kept approximately 15 degrees cooler than the outside temperature. With the air dehumidified as previously explained, this difference is ample for perfect comfort and is considered more desirable than a greater difference between inside and outside temperatures.

### 'FALSE ROOF' UTILIZED

Circulation of the air is one of the most novel features of the new system. Immediately beneath the steel roof of the bus is a "false roof" perforated by thousands of tiny holes through which the cool air enters the coach. The natural tendency of cool air to sink supplies the necessary circulation, changing the air inside the bus completely every three minutes, yet entirely eliminating drafts. When the air reaches the floor, it is removed through special vents.

Development of air-conditioning equipment for buses involved many unusual problems that have baffled

engineers for years. In addition to the technical requirements, it was necessary that the equipment be light in weight, compact in order to save space, noiseless in operation, and exceptionally efficient in order to handle the heavy cooling load. Sun radiation was an important factor.

Bus company officials were anxious not to disturb the graceful streamlining of their modern buses by unsightly, wind-resisting compartments on top of the coach, and no interference with normal operating facilities could be permitted.

The Interstate Transit Lines took up the task of solving these problems some two years ago. Soon experimental buses were on the road, and test buses were operated in regular service all last summer between Omaha and Los Angeles via Salt Lake City. Much of this territory is subject to excessive heat during the midsummer. This is especially true of the Mojave Desert between Las Vegas, Nev., (gateway to Boulder Dam) and Los Angeles.

### FOUR MAIN UNITS

Winter air conditioning (warm air instead of cool) proved equally successful. All the 140 buses equipped for comfort cooling during the summer will provide filtered, deodorized, and healthfully heated air, evenly distributed throughout the bus by means of the no-draft circulation previously described, during cold weather.

In its final form, the Interstate system consists of four principal units—the air-conditioning refrigeration power unit, the condenser, the cooling unit, and the master control station. The self-powered, automatically controlled Baker air-conditioning unit is self-contained and consists of a framework of welded aeroplane tubing incorporating a light weight, moderate-speed, 4-cylinder compressor complete with self starter, governor, and generator linked by multiple V-belts.

The Baker compressor is vertical type, Timken-bearing equipped, with full force feed lubrication and trunk type pistons.

The generator supplies power for the condenser fan and pump motor, as well as mounting fan for engine

radiator cooling. A control panel mounts necessary controllers, starting switches, high pressure cut-out, oil, and temperature gauges, etc.

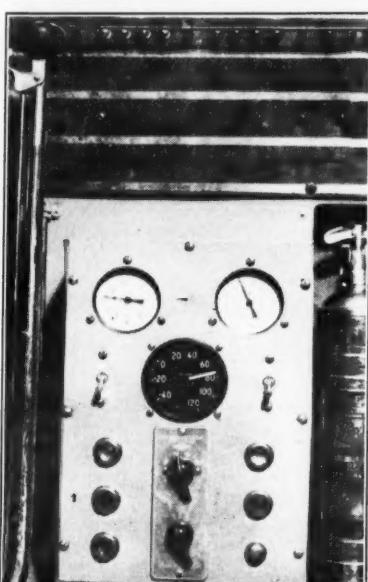
This assembly is mounted on rubber-tired wheels to eliminate road shock and to permit the unit to be withdrawn on demountable channels for inspection. Flexible connections make possible inspection of the entire unit while in actual operation, and the unit can be removed altogether when cold weather arrives.

The condenser is of the evaporative type. Self-contained and compact, it incorporates finned-type coils, motor-driven blower-type fans, spray nozzles, and motor-driven scavenger pump. A separate water supply tank is used.

### MINIMUM SPACE

Cooling units have been designed to take the least possible space in the ceiling of the bus, since maximum head room must be maintained. They are mounted in the rear of the bus, where fresh air is brought from grilles in the front of the bus. Air is forced into the space above the false ceiling by scroll type fans with power from the lighting batteries.

### Dashboard Control

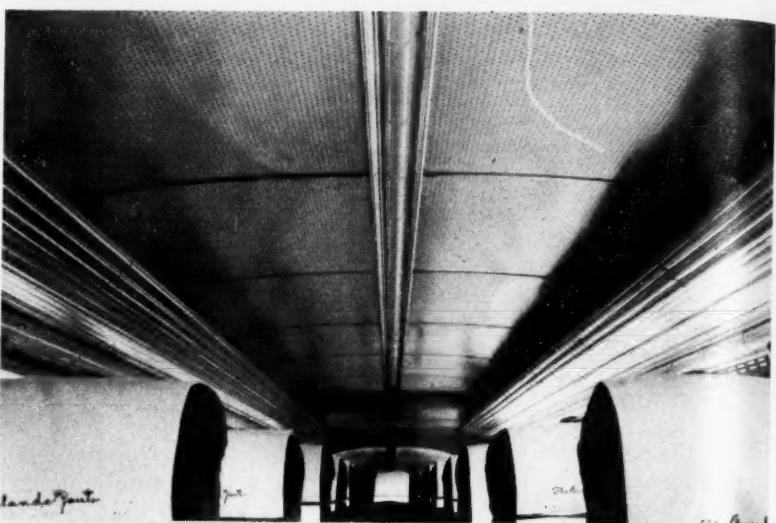


The master control station gives the driver constant supervision and control of the air-conditioning system. Both visible and audible signals are provided, together with pressure gauges, temperature regulator, and auxiliary choke for starting the unit.

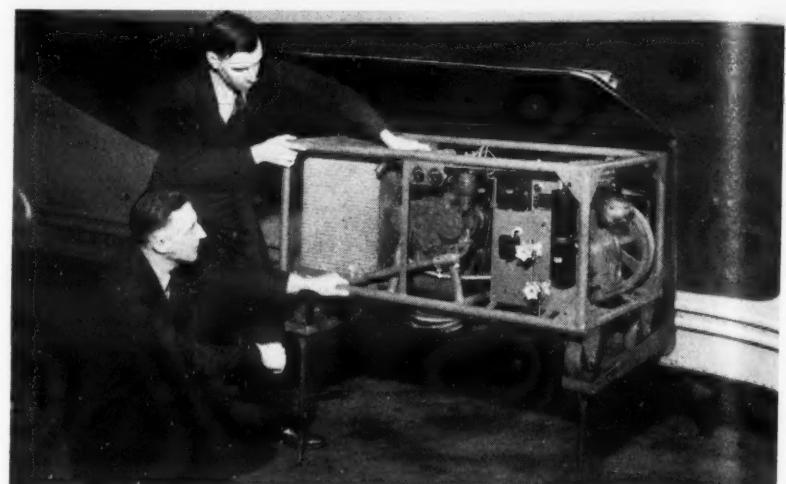
Control of the system is from the driver's master control station at the front of the bus where both visible and audible signals indicate the functioning of the system.

When the master switch is closed, a safety light indicates that fan units

### Details Of Bus Cooling System



The "false roof" of one of the super-coaches, showing the thousands of small holes through which the cool, fresh air enters the bus, without draft. The air is completely changed every three minutes.



James Goggins (standing), engineer for the Interstate Transit Lines, and Charles Knox, chief engineer of the Baker Ice Machine Co., inspect the new bus refrigeration power unit. Flexible connections make inspection of the unit possible in this position, while it is still in operation.

are operating to circulate air. This indicator reduces the possibility of the driver leaving fans running when the bus is taken out of service, which would result in draining batteries.

In summer service, the unit master switch is closed and, when the temperature in the bus rises to the point requiring cooling, the engine with automatic choke feature starts the unit. During the engine cranking cycle a red visible safety light shows on driver's control panel. When the engine has started and attained proper speed, this visible signal changes to green which indicates running position.

A cranking limit switch prevents cranking of the engine for an extended period should it fail to start. When this condition occurs, a visible signal so indicates. The driver has an auxiliary choke to assist in case of sluggish starting of the engine.

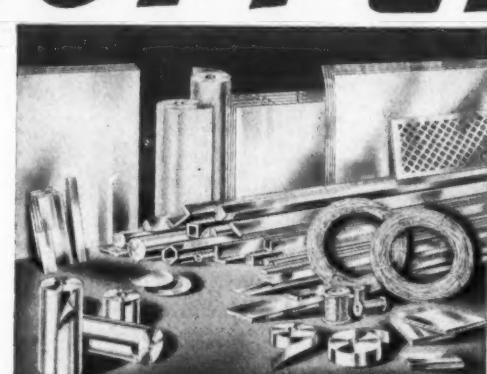
Unusual features of the system include an automatic load control to automatically increase the capacity of the refrigerating unit under increasing heat loads and a special selector control to insure proper sequence of all functions of the unit during starting and stopping of the automatic unit.

The entire air-conditioning system is amazingly light in weight, totaling only 1,250 pounds, of which the refrigerating unit represents half (630 pounds). Absence of weight—an important feature from a bus operating standpoint—is compensated for by the exceptional efficiency of the system.

The system is covered by eight U. S. patents and is controlled and used exclusively by the Interstate Transit Lines, Chicago and North Western Stages, and Union Pacific Stages.

The headquarters of the bus company, however, are located in Omaha, Nebraska. Omaha is also the home of the Baker Ice Machine Co. Baker engineers worked very closely with James Goggins, air-conditioning engineer for the bus company, in the development of the air-conditioning system, and perfected the refrigerating power units.

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*want relief from hot weather suffering . . .*  
**... 1,000,000 Can Afford**  
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**FIVE MILLION SUSPECTS . . . one million prospects . . . for Pleasantaire**  
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## Factors In Refrigeration Load Calculation For Locker Storage Job

On the "Commercial Refrigeration" page of the Dec. 29, 1937, issue of AIR CONDITIONING & REFRIGERATION NEWS was described a complete locker storage installed for William J. Vander Haar of Luverne, Minn. J. Malone & Moles, Carrier Corp. by Malone & Moles, Carrier Corp. distributor with headquarters in Sioux City, Iowa.

Because of the great interest in locker storage installations at the present time, it is believed that the heat load calculations for this locker storage job would be of considerable interest to many readers. The calculations are shown on this page.

As described in the Dec. 29 issue of the NEWS, the "Van's Locker Storage" system, as it is known, was constructed and equipped as follows:

(1) A chill room, where produce brought in by locker users is cooled before packing, kept at 35° F.

(2) A freeze room, where produce is taken from the chill room to be packaged and prepared for storage proper. The freeze room is kept at about 10° F.

(3) The locker room itself, which is maintained at a temperature of about 15° F.

Lockers are built five high. Each locker has a capacity of about 250 lbs. Lower lockers are easy to get at and pull out, and consequently they rent at a higher price. Rental price of the lower lockers in Van's Storage is \$12.50; other lockers rent for \$10 per year.

Six inches of cork insulation were used in the walls, ceiling, and floor of the Luverne storage job, in the locker room. Four inches of insulation were used in the chill room, and 8 inches in the freezing room, Mr. Malone said.

Carrier cold diffusers furnished the cooling effect in the various rooms.

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THERMOSTATIC EXPANSION VALVES  
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ADD TO YOUR PRODUCT  
THE REPUTATION OF  
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(DU PONT METHYL CHLORIDE)  
Prompt delivery in 20-, 60-, 90-, or  
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in principal cities.

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THE R. & H. CHEMICALS DEPT.  
Wilmington, Delaware  
ARTIC—the preferred Methyl Chloride for Service Work

## Actual Calculations For a Locker System

CHILL ROOM: 12 feet 3 inches by 11 feet 6 inches by 9 feet 9 inches	
35° Storage Temperature	
East Wall: 12 1/4 feet × 9 3/4 feet = 119.5 × .052 × (15-35)	-124 B.t.u.
West Wall: 12 1/4 feet × 9 3/4 feet = 119 1/2 × .076 × (110-35)	682 B.t.u.
North Wall: 8 1/2 feet × 9 3/4 feet = 83 × .052 × (10-35)....	-86 B.t.u.
North Wall*: 3 feet × 9 3/4 feet = 29 × .052 × (110-35)....	113 B.t.u.
South Wall: 11 1/2 feet × 9 3/4 feet = 112 × .074 × (100-35)....	530 B.t.u.
Ceiling: 11 1/2 feet × 12 1/4 feet = 144 × .076 × (125-35)....	930 B.t.u.
Floor: 11 1/2 feet × 12 1/4 feet = 144 × .072 × (70-35)....	288 B.t.u.
Lights: 120 × 3.4 .....	410 B.t.u.
Diffuser Motor: 1/2 × 3,000 .....	375 B.t.u.
Door Loss: 1,850 ÷ 3 × (37.8-12.5) .....	1,570 B.t.u.
People: 4 × 750 .....	3,000 B.t.u.
Product: 1,000 ÷ 24 × .75 × 60 × 1 ÷ .67 .....	2,800 B.t.u.
	10,488 B.t.u.

\*Apparently this portion of the wall is exposed to the outside atmosphere.

Room: @ 35° dry bulb, 87% relative humidity, .71 sensible heat factor, 28° apparatus dewpoint, .89 frost factor, 2.37 total heat difference.

$$\frac{12,000}{2.37 \times .89} = 5,700 \text{ effective air.}$$

2.37 = normal total heat difference.

Model 15K5 @ 680 r.p.m. = 5,900 effective air.

$$\frac{12,000}{2,280} = 5.28 \text{ degrees}$$

2,280 refrigerant factor.

Refrigerant temperature 28° - 5.28 = 22.72.

Compressor: Model 7F2-10WM @ 470 r.p.m. @ 82° condensing temperature @ 25° suction temperature = 11,300 B.t.u. with 1.11 bhp.

**FREEZE ROOM: 8 feet 5 inches by 6 feet by 9 feet 6 inches @ 10° dry bulb**

East Wall: 6 feet × 9 1/2 feet = 57 × .052 × (15-10)....	15 B.t.u.
North Wall: 8 1/2 feet × 9 1/2 feet = 81 × .036 × (110-10)....	292 B.t.u.
South Wall: 8 1/2 feet × 9 1/2 feet = 81 × .052 × (35-10)....	105 B.t.u.
West Wall: 6 feet × 9 1/2 feet = 57 × .039 × (110-10)....	222 B.t.u.
Ceiling: 6 feet × 8 1/2 feet = 51 × .034 × (125-10)....	200 B.t.u.
Floor: 6 feet × 8 1/2 feet = 51 × .039 × (70-10)....	119 B.t.u.

Light: 75 × 3.4 .....

Diffuser Motor: 1/2 × 3,000 .....

Door Loss: 480 ÷ 1 × (4.8 - 3.3) .....

Product: 1,000 ÷ 24 × .75 × 15 × 1 ÷ .67 .....

1,000 ÷ 24 × .40 × 22 × 1 ÷ .67 .....

1,000 ÷ 24 × .98 × 1 ÷ .67 .....

953 B.t.u.

1,000 B.t.u.

730 B.t.u.

700 B.t.u.

550 B.t.u.

6,100 B.t.u.

10,293 B.t.u.

Model 15K5 @ 1,160 r.p.m. 1/2 hp.

3,000 c.f.m. × .65 frost factor

Air Change:  $\frac{11,000}{485} = 4 \text{ min.}$

$11,000 \times .65 = 1.7 \text{ total heat difference}$

$10,000 \times 1^{\circ} = 10,000 \times 2.9 = 2.9$

$11,000 \times 2.9 = 4.8 \text{ temperature difference}$

$2,280 \times 4.8 = 10,000 \times 2 = 20,000$

$26,409 \times .75 = 1.76 \text{ total heat difference.}$

$20,000 \times .75 = 15,000 \text{ B.t.u.}$

**LOCKER ROOM: 23 feet 2 inches by 17 feet 4 inches by 9 feet 9 inches @ 15° dry bulb**

East Wall: 23 1/2 feet × 9 3/4 feet = 226 × .047 × (110-15)	1,010 B.t.u.
South Wall: 17 1/2 feet × 9 3/4 feet = 169 × .047 × (110-15)	775 B.t.u.
North Wall: 17 1/2 feet × 9 3/4 feet = 169 × .050 × (100-15)	720 B.t.u.
West Wall: 6 feet × 9 3/4 feet = 59 × .052 × (10-15)....	17 B.t.u.
West Wall: 12 1/4 feet × 9 3/4 feet = 124 × .052 × (35-15)....	129 B.t.u.
West Wall: 4 feet × 9 3/4 feet = 39 × .052 × (110-15)....	192 B.t.u.
Ceiling: 23 1/2 feet × 17 1/2 feet = 402 × .043 × (125-15)....	1,900 B.t.u.
Floor: 23 1/2 feet × 17 1/2 feet = 402 × .050 × (70-15)....	1,100 B.t.u.

Lights: 240 × 3.4 .....

Diffuser Motor: 2 × 1/2 × 3,000 .....

Door Loss: 6,000 ÷ 4 × (12.5-4.8) .....

People: 4 × 800 .....

5,789 B.t.u.

820 B.t.u.

2,000 B.t.u.

14,600 B.t.u.

3,200 B.t.u.

26,409 B.t.u.

Diffusers: 2 Model 15K5 @ 1,160 r.p.m.

2 × 3,000 = 6,000 c.f.m.

6,000 × .75 = 1.15 changes per minute

3,920 = 1.15 total heat difference.

Effective air = 10,000 × 2 = 20,000

26,409 = 1.76 total heat difference.

20,000 × .75 = 15,000 B.t.u.

Room Conditions: 15° dry bulb, 85% relative humidity, .85 sensible heat factor, 9° apparatus dewpoint, 1.71 total heat difference. 4,560 refrigerant temperature.

26,409 = 5.8 temperature difference

4,560 = 5.8 = 3.2°

9 - 5.8 = 3.2°

Compressor for Freezer and Locker Room:

One Model 7H5-50WM @ 600 Rev. @ 82° Cond.

-5° 33,600 B.t.u. 4.3 bhp.

0° 38,800 B.t.u. 4.6 bhp.

5° 44,400 B.t.u. 4.8 bhp.

Load Estimate: 11,000 @ -1° freezer

30,000 @ +1.4° locker

Capacity of model 7H5 will average 38,000 to 40,000 @ 0° +. Capacity will shift from one room to other automatically as temperature in one room changes.

Freezer freshly loaded may rise briefly but not seriously. If temperature goes above 15°, a thermostat in the freezer may close a solenoid liquid stop valve on one locker diffuser. Then freezer temperature will drop quickly.

Operation then: 10,000 × .7 × 2.95 = 20,600..... 20,000 locker

To 5 - 20,600 ÷ 2,280 = -4°..... 15,000 freezer

Probably 33,600 B.t.u. @ -5°..... 35,000

## Baltimore Dept. Store Handling Pleasantaire

BALTIMORE—Hochschild, Kohn & Co. department store here has been appointed a dealer for the Pleasantaire line of room coolers, manufactured by Pleasantaire Corp., Washington, D. C. Room cooler activities of the department store will be under

the direction of Gerry Eser, who has had charge of merchandising the store's line of Oil-O-Matic oil burners.

While sales activity will be centered at the store's separate headquarters for oil burners and kindred lines at 527 N. Howard St., displays will be maintained in the refrigeration and major appliance department of the department store.

Initial sales drive will be handled through a staff of specialty salesmen.

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## Benefits Of 'True' Air Conditioning Related At Iowa Conference

(Concluded from Page 1, Column 2)  
important part in the operating room to help the patient again regain his health," Johnson continued. "In the operating room, the patient usually is at a low physical ebb. He has lost his ability to regulate body temperature. He is sensitive to air changes. By careful regulation, the surgeon in charge may produce the atmosphere most conducive to a successful operation. Post-operative complications are also kept at a minimum when the operating room atmosphere is carefully regulated.

"Another step in the attainment of optimum conditions in the hospital comes through the comfort created for the staff by means of air conditioning," he added. "In most hospitals the old two-shift system is still used. A nurse either works from seven in the morning until seven in the evening or from seven in the evening to seven in the morning.

"During the hot summer months, the night duty nurses are compelled to sleep during the hot daytime hours. Under ordinary conditions, sleep is almost impossible. She is just as fatigued as she goes on night duty as she was the previous morning. She cannot do justice to the arduous task of aiding her patients in the attainment of health in such a condition. A nurse resting in air-condi-

tions has an opportunity to sleep and regain her energy."

Johnson told of a St. Louis woman who suffered chronically from hay fever and ordinarily left her home in the Missouri city, where the weather bureau last summer recorded 29 consecutive days that the mercury soared above the 100° mark, for relief at northern resorts.

"Last summer she enjoyed a sneezeless summer in St. Louis and gained six pounds in weight rather than losing as she was accustomed to doing, even in the northern resorts. How was this accomplished? She stayed in her newly air-conditioned apartment a good portion of the day, venturing out into the raw atmosphere of the city streets only when absolutely necessary."

### Conditioning To Give 'Rebirth' To The Home?

Swinging into a discussion of air conditioning in the home, Johnson declared:

"Sociologists look for a rebirth of the importance of the home with the advent of air conditioning. Our whole habit of living will be changed whereby the home will be the center of our lives."

"Recreational pursuits will be built around the home. Even now, radio

program directors are realizing the fact that there will be no off season in radio broadcasting.

"The medical profession has long contended that winter colds are largely due to the methods we use in heating our building. The mucous membranes of the nose and throat secrete a fluid which under normal conditions adds moisture to the air before it reaches the lungs. Under abnormal conditions where the air is overly dry, the mucous membrane is over-taxed and the nasal secretion is dried up.

"Result is a serious irritation to the tender membranes which cause swelling and inflammation, thus general resistance is broken down, offering a harbor for germs of various respiratory disease that ride on dry dust particles. Net results are colds, coughs, grippe, laryngitis.

"Air conditioning eliminates the cause. In the wintertime where the heating plant causes the inside air to become very dry, it not only cleans and purifies the air and rids it of its germs, but it supplies the necessary humidity. . . .

"Air conditioning in the home also creates cleanliness, one of the first attributes necessary for health. Windows may be nailed shut, thereby preventing outside air laden with dust and dirt from entering the home. . . .

"With air conditioning, it is possible to obtain more equalized temperatures throughout the various zones of the room. Therefore, children playing at the floor line are just as comfortable as the grown person seated in a chair or standing. Drafts are completely eliminated."

### Report Of Savings From Office Air Conditioning

Of air conditioning's application in offices, Johnson said, "when one considers the time lost in opening windows, swabbing brows, drinking water, and other heat-escaping activities carried on by employees on a hot summer's day, there can be no doubt that air conditioning is a decided factor in increased efficiency. On a hot day, work becomes a pleasure when it can be done in the confines of an air-conditioned office."

He cited studies made by the Chicago Tribune and the Philadelphia Electric Co. to show how owning and operating costs of summer air conditioning are offset by fewer lost work days from respiratory diseases.

"In the factory," Mr. Johnson continued, "air conditioning has such an important effect on comfort that unions very often demand air-conditioning equipment be installed as part of their agreement between employee and employer. In many instances, strikes have been averted because air-conditioning installations were made. Probably in no other type building does air conditioning have so much effect upon the comfort of the occupants than in a factory."

Studies made in the Philadelphia plant of the American Cigar Co. were cited as a remarkable example of air-conditioning results.

"The cigar manufacturers in Philadelphia generally recognize that humidifying equipment is essential for the production of high-quality cigars," Mr. Johnson said. "However, some doubt existed as to whether it paid to install complete air conditioning.

"Studies were made to try to evaluate the benefits of air conditioning during the summer months and to find out whether the savings were sufficient to offset the installation and operating costs.

"The benefits derived from the installation of the equipment far exceeded expectations. Not the least of

these benefits had to do with the reduction of time lost among workers. Wasting of labor turnover and increases in efficiency decided the individual savings resulting from each of these benefits—there was an increase in production worth thousands of dollars.

"Under normal summer conditions without air conditioning, an average of 50 girls per day for 75 days would become sick or indifferent to their work and would work one half a day, leaving at noon. Further, due to the discomfort, many girls would leave their employ and obtain work as waitresses, etc., at summer resorts.

"After complete air conditioning was installed, it was found that the lost time was reduced from an average of 50 girls out one-half day for 75 days to an average of five girls out one-half day for 75 days. Labor turnover was reduced by 100 girls during the trying hot days and materially decreased training expenses. In addition, more comfortable working conditions increased the efficiency of workers to such an extent that rejects were reduced from between 3 and 4% to between one-half and 1%.

"Under normal summer conditions, due to temperature and humidity conditions in the plant, production would fall off from 4,000 to 3,600 cigars per machine per day—a decrease in production of 10%. With complete air conditioning, instead of production falling off to 3,600 cigars per machine per day, the machine could be worked at full capacity and produce 4,000 cigars per machine per day.

"Summarizing the gross savings made by reduction of lost time, reduction in labor turnover, reduction in rejects, and increase in production amounted to \$29,546 per year. Since the total owning and operating cost of the added air conditioning was \$6,174.50 per year, there was an outright profit of \$23,371.50 per year. It was also determined that the American Cigar Co., with air conditioning, could put out five cigars instead of four, before air conditioning was installed."

### Architect's Report On Use Of Attic Fans

E. H. Borg of Proudfoot, Rawson, Brooks & Borg, Des Moines architectural firm, and a member of the American Society of Mechanical Engineers, discussed the limited means of lowering house temperature by means of attic ventilation.

He stressed the limitations of this means of comfort cooling, declaring that in "corn growing periods" in Iowa, lasting from five to 10 days at a time, there is little variation in day and night temperatures, lowering benefits from attic ventilation to a minimum. He stressed the importance of advising prospective purchasers of attic ventilating equipment of its characteristics and limitations.

Detailing 24-hour operation of an attic ventilation system, he said:

"Draw the air through only the attic during the part of the day when the outside temperature is higher than the inside temperature. In the evening when the outside air is cooler than the inside, the attic air intake is closed and second floor ceiling air intake opened and the first story windows opened to create the maximum circulation in the occupied room. Later, the first story windows are closed and the bedroom windows opened to give the full circulation through the sleeping quarters.

"You will notice that this cycle of operation will give no circulation through the living quarters during the hot part of the day, such circulation will have to be created by means

of portable fans, or with the furnace fan if the house is so equipped.

"Lower average temperatures can be maintained in the house by recirculating all the air in the house, including basement, as is possible with a forced warm air heating system or a forced air humidifying system used in conjunction with radiators.

"The objections to this system is the amount of manipulation required to give maximum benefit and the large amount of unfiltered air that is drawn through the house. The objection to the hand operation can be partially overcome by the use of time switches or outdoor thermostats.

"Development of this system for averaging nature's air temperatures may be a logical stepping stone to year-around air conditioning with mechanical refrigeration. A person who has experienced the benefits of attic ventilation should be a good prospect for a complete system when further developments and quantity production will bring its cost within his reach," Mr. Borg concluded.

**ACD**  
Engineered  
Refrigerant  
Controls  
— For Highest  
Evaporator Efficiency  
Alco Valve Co. St. Louis, Mo.

**SUPPLIES • PARTS • TOOLS**  
Refrigeration — Air Conditioning  
Oil Burner — Stoker  
Write for Our New Catalog  
**VINCENT BRASS & COPPER CO.**  
100 North Second St., Minneapolis, Minn.

**PAR** CONDENSING  
UNITS  
28 MODELS  
1-4 TO 20 H.P.  
WRITE FOR FREE CATALOG  
MODERN EQUIPMENT CORP.  
DEFIANCE, OHIO, U.S.A.

**Compressors**  
**M&E**  
EST. 1866  
MERCHANT & EVANS CO.  
Phila., Pa., U.S.A. Plant at Lancaster, Pa.

**AIR CONDITIONING**

"A RELIABLE SOURCE  
FOR THE TRAINING  
YOU REQUIRE . . ."

We have met the demand in every respect for the proper training of men for the AIR CONDITIONING and REFRIGERATION industry. Superb equipment in more than 9000 sq. ft. of laboratories and classrooms. Practical study that gets results! Not a correspondence course.

**EMPLOYERS ATTENTION!**  
Call on us for the men you need! Our files of competent men are available. No fees to either employer or employee.

**REFRIGERATION**  
TECHNICIANS INSTITUTE  
244 WEST 14th STREET NEW YORK

**TOSS OUT THE OLD—  
SLIP IN THE NEW!**

**Ranco** Household Refrigerator Controls  
More EXACT Replacements than any other line

Send for Bulletin.

For Complete Export Information, Write

**Ranco** INC.,  
Columbus, Ohio, USA



# Distributor-Dealer Doings

## 13 El Paso, Tex. Dealers Stage Showing In 'Spring Fiesta'

EL PASO, Tex.—Thirteen local electrical appliance dealers staged a spring showing of refrigerators in El Paso Electric Co.'s display room here recently as part of a three-day "Spring Fiesta" in which automobile dealers and other retail merchants also displayed their wares.

The fiesta featured lucky number prize contest for the public. Each of the 61 merchants cooperating in the event distributed tickets to all who asked for them.

On the final fiesta day, a special committee posted the winning ticket for each store on the window of that store, and the prize, displayed in the window, was presented to the holder of the lucky ticket.

The 13 major appliance dealers participating were: Appliance Sales Co.; Colonial Furniture Co.; El Paso Electric Co.; Imperial Furniture Co.; Music Mart; Oriental Furniture Co.; Peterson Paint & Lumber Co.; Popular Dry Goods Co.; Sears, Roebuck & Co.; Union Furniture Co.; W. G. Waltz Co.; Welch Furniture Co.; and White Auto Stores.

### Loomis Opens Norge Outlet

WESTWOOD, N. J.—Frank K. Loomis, Inc., Norge dealer, recently opened a new store at 26 Westwood Ave.

YOUR ASSURANCE OF DEPENDABILITY  
**V-METH-L** AND  
**EXTRA DRY ESOTOO**  
PRODUCTS OF  
VIRGINIA SMELTING CO.  
WEST NORFOLK, VA.

**Dayton**  
V-BELTS  
Silent, vibrationless, dependable, long-lasting. Powerful grip prevents slippage. A nearby distributor carries a complete stock for appliances and machines.  
THE DAYTON RUBBER MFG. CO., DAYTON, OHIO  
World's Largest Manufacturer of V-Belts

**Uniform**  
**COMPRESSOR**  
**CASTINGS**  
For nearly a million refrigeration and air conditioning units have been produced by Nelson in the past five years. If your compressor specifications call for QUALITY castings, let us quote!  
NELSON BROTHERS CO.  
SAGINAW, MICHIGAN

**MASTERCRAFT**  
ADJUSTABLE PAD AND CARRYING HARNESS  
The most efficient and economical equipment made for handling refrigerators safely and without scratching or marring. Pad is separate from harness and both adjustable to all styles and sizes of cabinets. Efficient, sturdy, easily and quickly applied. Name of refrigerator attractively lettered on pad without charge.  
Adjustable Pad, \$9.50 each  
Adjustable Harness, \$6.00 each  
f.o.b. Chicago.  
Write for 1938 f.o.b. and prices on pads for refrigerators, washers, irons, ranges, radios, etc.  
Pat. Appl'd for

BEARSE MANUFACTURING CO.  
2015-3825 Cortland Street, Chicago, Illinois

## Ft. Wayne Distributor Under New Ownership

FORT WAYNE, Ind.—The H. B. Shank Co., electrical appliance and automotive equipment distributor-dealer here, has been purchased by G. F. Hutchinson of South Bend, Ind., president of South Bend Investment Corp. and of Northern Indiana Distributing Co., appliance and distributing firm, it was announced last week.

Mr. Hutchinson will operate the wholesale and retail business of the former Shank organization at its present location, Washington Blvd. and Fairfield Ave. Name of the company will be changed to Standard Equipment Co., but no other major changes are planned, it was said.

A new commercial equipment division will be added, handling display cases, commercial refrigerators, store equipment, and air-conditioning systems. New owner also will continue to operate the automobile equipment division of the business, and to merchandise the complete line of appliances formerly handled, including refrigerators, ranges, washers, display cases, and electrical equipment.

The Shank store, largest of its kind in Fort Wayne, includes a three-story building with 75-foot frontage on Washington Blvd., 150 feet on Fairfield.

## N. Y. Dealers Plan Limit On Distributors' Sale To Apartment Houses

NEW YORK CITY—Activities of the apartment house divisions of household refrigerator distributors would be limited to customers with a potentiality of five or more units, under terms of a resolution reported at last week's meeting of the industry program committee of the Electrical & Gas Association of New York.

The resolution, reported by H. C. Calahan, chairman of the wholesalers-distributors group of the association and New York manager for General Electric Supply Corp., provides that customers with a potentiality of less than five refrigerators be considered as retail customers, and that they be dealt with by dealers instead of by distributors' apartment house divisions.

This would mean that such small building operators in the future would have to buy their refrigerators through authorized dealers at retail prices, instead of purchasing through distributors' apartment house divisions at a discount.

Distributors also went on record as opposed to subscriptions and donations for advertisements in publications of dealer organizations, annual and testimonial dinners, and other functions. In the resolution approved by the group, these were characterized as "a burden and an unjustifiable expense," and it was decided to discontinue the practice.

Requests for such donations and subscriptions will be turned over to the association's distributor group for disposal.

## New York Group Conducts Lectures On Selling

NEW YORK CITY—Educational committee of the Electrical & Gas Association of New York, in cooperation with the Salesmen's League of America, sponsored a series of lectures on selling, which were open to members of the Electrical & Gas Institute as well as to distributors, dealers, salesmen, and utility field representatives.

At the first three meetings in the initial series, following speakers were heard:

Edgar Kobak, vice president of Lord & Thomas advertising agency, whose topic was "R-E-L-A-X—That's the First Rule of Selling"; John Jones, vice president of Alexander Hamilton Institute, who discussed "Putting the Prospect Above the Products"; and Saunders Norvell, member of a firm of marketing consultants, who gave "A Chat on Selling." Attendance averaged 200.

## BUY PEERLESS FOR PERFORMANCE

### PEERLESS CAPACITY BOOSTER (HEAT-X-CHANGER)

#### Will Increase the Capacity of Any Refrigeration Plant

Here's a simple, inexpensive way to greatly increase the capacity of any refrigerating system, large or small. Just install one of the new Peerless Capacity Boosters—made with High Dispersion Heat Transfer Surface, the fastest available.

When a Capacity Booster is installed 100% of the cooling coil becomes **EFFECTIVE REFRIGERATING SURFACE**—none of the coil is used as a **REFRIGERANT DRYER**.

Any customer will buy when you can show him savings and efficiency such as the Capacity Booster makes possible.

This new Capacity Booster will make more sales—and more profit for you.



PEERLESS CAPACITY BOOSTER MODEL A-1

### PEERLESS of AMERICA, Inc.

ESTABLISHED IN 1912 AS THE PEERLESS ICE MACHINE CO.  
New York Factory Main Factory—General Offices Pacific Coast Factory  
43-20 34th Street 515 West 35th Street 3000 S. Main Street  
Long Island City Chicago Los Angeles

PEERLESS JOBBERS IN ALL PRINCIPAL CITIES

## G-E Man Gets Breakfast Automatically In His All-Electric Home

BELLEVILLE, Ill.—Completely electrified is the modernistic new home of Allan J. Niess, secretary-treasurer of Knapp Furniture Co., local General Electric dealer. That is, if Mr. Niess' home was fortunate enough to escape the terrific tornado which swept through here recently.

So up-to-date is the electrical equipment that when he is awakened by the electric alarm clock in the morning, Mr. Niess can reach out and snap a switch beside his bed to set his breakfast cooking on the electric stove in the all-electric kitchen.

"We have been selling G-E appliances so long," said Mr. Niess, "that our job of planning an all-electric home was an easy one, and living in it now is still more pleasant."

In the basement are a direct-fired warm air furnace, water heater, washer, ironer, and hand iron. The kitchen is equipped with a refrigerator, range, Disposall, dishwasher, radio, toaster, coffee maker, sandwich cooker, waffle iron, vent fan, cleaner, chafing dish, and electric clocks.

The house has complete radial wiring, with circuit breaker switches, plug-in phone connections in all rooms, built-in radio antennas and indirect lighting fixtures, and Lumilene lamps.

Every room is equipped with a telephone. In the dining room there is a three-intensity light. There is a three-way circuit between the master bedroom and kitchen, with indicating pilot lamps. This makes it possible for Mr. Niess to put bread in the toaster, eggs in the egg cooker, and coffee in the coffee maker before he retires for the night, and then start the preparation of breakfast by snapping the bedside switch.

A vent fan over the refrigerator in the kitchen is controlled by a three-speed switch near the range. The furred-down section from the ceiling to the cabinet tops provides a convenient air duct for pulling air through a grille over the range, around to the outer wall, and out through a shutter over the refrigerator.

James & Co., G-E distributor supplying Knapp Furniture Co., worked with the architect and selected equipment, Mr. Niess says, and Midwest Air Conditioning Co., distributor of G-E oil furnaces, planned the entire heating system.

So enthusiastic is he over application of electricity to modern living, that Mr. Niess now signs his correspondence "electrically yours, Allen J. Niess."

## Appliances Headline Show At Charlotte, N. C.

CHARLOTTE, N. C.—Major appliance displays formed an important part of the House and Home Exposition held here April 12 to 15, under auspices of the Charlotte Observer, local daily newspaper.

The lavish entertainment program headlined Jesse Crawford, an organist noted for his stage, screen, and radio work.

Among the firms which exhibited electric refrigerators at the show were: R. P. Steffey Co., General Electric; Eptings, Inc., Apex; Pound & Moore Co., Frigidaire; Duke Power Co., Kelvinator; Continental Electric Corp., Westinghouse; Good Housekeeping Shop, Leonard; Sears, Roebuck & Co., Coldspot.

**'I WON'T BUY A GAUGE WITHOUT THE RECALIBRATOR!'**

That has been the attitude of many service men since the **RECALIBRATOR** feature was incorporated in Marsh Gauges, Thermometers and Recorders. Experience and laboratory tests have shown that when a bourdon-tube instrument is knocked out of adjustment the mere removing and re-setting of the pointer at one point on the scale, does not correct it throughout the entire range. The Marsh **RECALIBRATOR** gets at the heart of the trouble, however. By simply turning the **RECALIBRATOR** screw (see illustration) the distortion of the bourdon tube is compensated for and this re-calibrates the instrument throughout its entire range.

Gauges and dial thermometers with this feature cost little more than the ordinary kind. It is an exclusive Marsh feature.

Ask for the big refrigeration catalog covering this and other Marsh betterments.

**JAS. P. MARSH CORPORATION**  
2067 Southport Avenue CHICAGO, ILL.

**MARSH** *Refrigeration Instruments*  
GAUGES—THERMOMETERS—RECORDERS—MERCURY SWITCHES



**NEW**  
**Percival**  
**STREAMLINER!**

### DISTRIBUTORS WANTED!

Write for details of Profit-making franchise. Complete PERCIVAL line meets every requirement of the modern food store.

Modern styling . . . Beautiful design . . . Outstanding construction . . . Economical operation!

TOMORROW'S case, presented TODAY! Get the jump on other distributors by selling this modern marvel of electrical refrigeration. Its NEW style and NEW features give you exclusive selling advantages! NEW PERCIVAL FINANCE PLAN HELPS YOU SELL.

**C. L. PERCIVAL COMPANY**

DES MOINES . . . IOWA

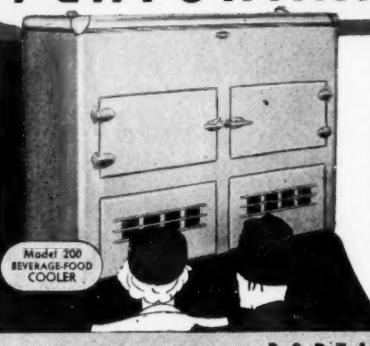
52 YEARS OF SERVICE 1886-1938

## REFRIGERATION and AIR CONDITIONING PARTS\*



**PROMPT SERVICE**  
Write for  
OUR LATEST CATALOG  
ON YOUR LETTERHEAD  
NEW YORK BRANCHES: CLEVELAND ST. LOUIS  
The HARRY ALTER CO., 1728 SO. MICHIGAN AVE., CHICAGO, ILL.

**PERFORMANCE**



*Sells*  
AND KEEPS IT *Sold*

Cooling bottled goods from room temperature to desired degree in 30 minutes—enormous capacity—ability to hold cold longer (from 3 to 6 hours)—no “hot spots”—protected coils that promote sanitation and prevent loose labels, dirt, or other debris from retarding refrigeration—super-powered—precision built—THESE FEATURES enable PELCO to outperform any cooler you've ever seen!

Get the FACTS on PELCO today.  
Address Desk A-48.

Model 200 BEVERAGE-FOOD COOLER

Refrigerator Division PORTABLE ELEVATOR MFG. CO.  
IN CANADA, UNIVERSAL COOLER CO. OF CANADA, LTD., BRANTFORD, ONTARIO • BLOOMINGTON, ILLINOIS, U. S. A.

**PELCO**  
Electric BEVERAGE and  
BEVERAGE-FOOD Coolers



Model 240 BEVERAGE COOLER

Floating Ice

PELCO makes its own FLOATING ICE automatically, as needed.

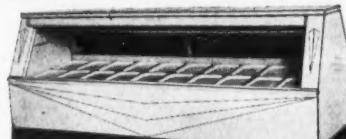


**THE NEW ECON-O-COOLER**

There are more than 3500 sales representatives who profitably sell the Koch line. Yet many attractive territories are still open to aggressive sales organizations. Write today for full particulars and prices.

**KOCH** REFRIGERATORS  
NORTH KANSAS CITY, MO.

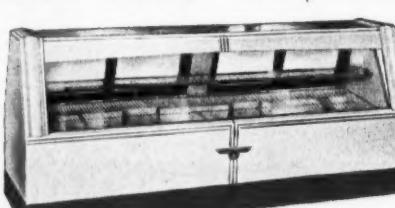
**PERFECTED INSULATION**



Equipped with Famous Fogel Lifetime Vision

**FOGEL**  
REFRIGERATOR COMPANY  
16th and VINE STS., PHILA., PA.

**THE NEW 1938 C-B KOLD-O-MATIC**

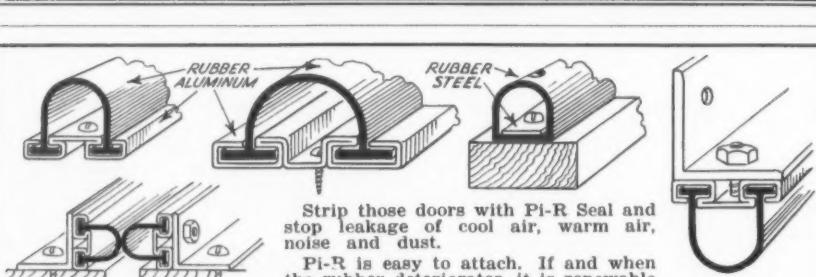


Display Cases & Refrigerators Fulfill Constantly Increasing Demands For

- MORE DISPLAY
- MORE EYE APPEAL
- PROPER TEMPERATURE
- PROPER HUMIDITY
- PROVEN CONSTRUCTION
- PROVEN QUALITY

EXCLUSIVE TERRITORIES AVAILABLE FOR QUALIFIED DISTRIBUTORS

**THE CINCINNATI BUTCHERS SUPPLY CORPORATION**  
CINCINNATI, OHIO



Strip those doors with Pi-R Seal and stop leakage of cool air, warm air, noise and dust. Pi-R is easy to attach. If and when the rubber deteriorates, it is renewable without tools, in a jiffy! Nothing seals like rubber!

Thousands of feet already in use. Distributors in the principal cities. Some territory still open.

**G. W. GAIL, Inc.**  
Industrial Bldg., Baltimore, Md.

**NEW IDEAS FOR REFRIGERATOR DOORS**

1. Locked-in, lift-out doors
2. Tightly closed overlap
3. Reduced air leakage
4. Roller bearings
5. Quiet closure
6. Lighter weight
7. Greater strength
8. Shock absorbing jambs

**ACE "LOXIT"** PATENTED DOORS

**A**t no extra cost—all the engineering features for display cabinet doors listed at left—with the new Ace "Loxit" hard rubber assembly units—doors, rails, jambs. Complete range of sizes. Write for details of new standard closure lids and insulating rings for frozen foods cabinets, ice cream cabinets and soda fountains. American Hard Rubber Co., 11 Mercer St., New York . . . 111 West Washington St., Chicago, Ill. . . Akron, Ohio.

twenty-four hour service plan. INSTRUMENT SERVICE LABORATORIES, 24 W. 20th St., New York.

DOMESTIC CONTROLS repaired. Ranco pencil \$1.75; Ranco box \$2.00; General Electric \$2.00; Cutler-Hammer \$2.00; Bishop Babcock \$2.00; Majestic \$2.00; Tag \$2.00; Penn \$2.00. In business over 20 years. Our name is our guarantee. UNITED SPEEDOMETER REPAIR CO., INC., 436 West 57th Street, New York City.

CONTROLS REPAIRED. You profit by our ten years' experience, trained personnel, and precision equipment. Each control accurately calibrated and re-finished. Perfect work, prompt service, reliable guarantee. If it contain a bellows, Halectric can repair it. Try Warrenol for stuck compressors. Samples available. HALECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

100% SATISFACTION GUARANTEED—Hermetic rebuilding service. G.E.—Westinghouse—Majestic—U. S. Hermetic—etc. Our success in rebuilding sealed units is founded on these facts—10 years in the refrigeration industry—5 years' concentrated effort on hermetically sealed units. Customers in 37 states had hermetically sealed units rebuilt or exchanged by us in the past year. Complete factory equipment for precision rebuilding. One year guarantee on all rebuilt units. Exchange service available on most makes and models. Write for prices and descriptive literature. REX REFRIGERATION SERVICE, INC., 2226 S. State St., Chicago, Ill.

#### PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

## CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words four cents each. Three consecutive insertions \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

#### POSITIONS WANTED

A-1 SERVICE MECHANIC desires position with independent service company, distributor, dealer. Seven years' experience in field on commercial and domestic. Capable of handling own installation, wiring, motors, high and low sides, dry expansion. Experience with all popular gases. Fully equipped with car. Looking for a congenial connection. Go anywhere. Box 1034, Air Conditioning & Refrigeration News.

SERVICEMAN AVAILABLE May 1st. Married, 32. Twelve years' experience including factory training with two major manufacturers, Frigidaire and General Electric. Commercial, domestic and air-conditioning, with a wide range in the appliance field. Best references. Fully equipped. Confident that qualifications will meet the most exacting requirements of employer. Box 1036, Air Conditioning & Refrigeration News.

#### BUSINESS OPPORTUNITIES

A WELL known manufacturer of refrigerator door gaskets wants a representative who is now calling on the refrigerator industry—both manufacturing and jobbing—and who wishes an additional non-conflicting line. Metropolitan New York area. References required. Box 1037, Air Conditioning & Refrigeration News.

BUSINESS OPPORTUNITY in large Pacific Coast city. Refrigeration business established 15 years. Franchise for distribution of nationally known ammonia, methyl, and Freon equipment. This business for sale very reasonable. Address Box 1038, Air Conditioning & Refrigeration News.

ATTENTION, MANUFACTURERS—Are you interested in securing a fully developed, thoroughly time tested and dependable hermetic refrigerating compressor of exceptionally low manufacturing cost, adaptable for household refrigerators, ice cream units, water cooling, air conditioning and small commercial installations? For information regarding manufacturing rights address Box 1039, Air Conditioning & Refrigeration News.

A SOUTHERN California refrigeration sales and service business near Los Angeles for sale. (Principally service) doing good volume. \$1,000.00 will handle. Box 1033, Air Conditioning & Refrigeration News.

FOR SALE—Well established air conditioning business in one of Florida's largest cities. Holds franchise of one of best known manufacturers. Splendid good will. Owner retiring, only reason for selling. Address Box 1035, Air Conditioning & Refrigeration News.

#### FRANCHISES AVAILABLE

COMPLETE LINE of refrigerator display cases, walk-in coolers, and refrigerators for meat markets, grocers, restaurants, etc. Sell with Ehrlich line of compressors, or with any other line of machines. Attractive discounts, also liberal financing arrangements to help sell. 69 years in business. Write for full information and catalog. EHRLICH REFRIGERATOR MFG. CO., St. Joseph, Mo.

#### FRANCHISES WANTED

ESTABLISHED MANUFACTURERS' representative calling on the refrigeration supply jobbers in following territory: New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, Virginia, North Carolina. Can handle one or two additional lines on a commission basis, can warehouse. Box 1032, Air Conditioning & Refrigeration News.

#### REPAIR SERVICE

\$25.00 REWARD for the thermostatic or pressure control or valve we cannot rebuild. We also rebuild all types of relays and electric controls. Lowest price, quickest service. Guaranteed calibration and workmanship. Send for price list and our

or N.S.W. Bookstalls and would be pleased if you would drop me a line to my home address (1218 Francis St., Leichhardt, Sydney, N.S.W.) letting me know if you do business with either of these firms, and I could pay for books there. If this is not suitable to you, please send letter stating price in Australian money if possible, which I will remit to you immediately.

Answer: We regret to advise that to date we have printed no information concerning the servicing of gas refrigerators. The Electrolux, which is the only gas refrigerator being sold to any great extent in the United States, is distributed through the large gas companies, who render all the service necessary to these refrigerators so long as they are connected on their gas lines. For this reason, there is very little if any demand for independent service information on gas refrigerators, hence our reason for not having such information available.

We do have a very complete set of Master Service Manuals on household refrigeration and another set on commercial refrigeration, which cover accepted service procedure on all the fundamental types of electric refrigerators.

F. C. Lovelock Pty. Ltd., 16-20 Young St., Sydney, Australia, carries a supply of these manuals in stock for immediate delivery, and you may order them directly from this company.

## Where Air Conditioning Is Installed In Fresno

No. 3227 (Jobber, California)—Please send your latest copy of air-conditioning surveys giving details of all installations of Fresno and San Joaquin Valley Area.

Answer: Details of all air-conditioning installations in the Fresno and San Joaquin Valley area through 1936 were published in "Air Conditioning Surveys," a booklet which we published last year, and which sells for 50 cents.

Information on the 1937 installations has not yet been obtained, but when we get it, it will be published in an issue of AIR CONDITIONING & REFRIGERATION NEWS.

## QUESTIONS

### Malted Milk Machine Maker's Address

No. 3228 (Distributor, Florida)—We note item on page 9 of your March 23 issue which refers to a \$150 Frozen Malted Milk unit now gone into production by the Frozen Malted Milk Co., New York City. No address of this company is given, and since they are probably a new concern, we are afraid that a letter addressed to them might not be delivered.

"Won't you kindly refer this inquiry to them and advise that we would like to have illustrations, descriptive details, and a distributor's proposition?"

Answer: Address the Frozen Malted Milk Co. at 43 East 20th St., New York, N. Y.

### Ice Cube Tray With Quick Release

No. 3224 (Dealer, South Carolina)—"Can you give us the addresses of any independent manufacturers of quick cube releases, to be used in aluminum cube trays? What we are after is something somewhat similar to Frigidaire's releases."

Answer: Only source of ice cube tray release of which we have knowledge is the Inland Mfg. Co., Dayton, Ohio.

### Odor Control In Locker Storages

No. 3225 (Manufacturer, Wisconsin)—"Will you please give me information on the methods used for removing odors in the locker rooms of cold storage locker plants. Are there any air filters on the market for the removal of such odor."

"How often must the air be changed, and what kind of ventilation is necessary in a cold storage locker room?"

Answer: Contact the following companies for information on odor control in cold storage locker plants: Betz Co., Betz Bldg., Hammond, Ind. Consolidated Air Conditioning Corp., 114 E. 32nd St., New York, N. Y.

### Seeks Service Data On Absorption Models

No. 3226 (Dealer, Australia)—"Recently, I came into possession of one of your books, 'The Master Service Manual' and as it is very hard to obtain any books on domestic refrigeration in Australia, could you please supply me with a book on the subject. The type I am mainly interested in is the gas refrigerator (such as Electrolux) and would appreciate it if you could give me some information on this type with details of construction, maintenance, and care."

"I do not know if you have any agents in Sydney but think the business could be done through Dymocks

One of the things we wish to show in this bulletin is the reduction on kilowatt hour consumption per annum that has taken place in the domestic household refrigerator.

"Would it be possible for you to give us average figures showing consumption per annum in each of the years 1928 through 1937?"

Answer: In the Dec. 29, 1937, issue a story starting on page 1 under the headline, "Low Running Costs of Modern Units Shown In Tests" compares average kilowatt hour consumption in 1928 with that in 1937.

In the June 16, 1937, issue there is a story on page 1 which also gives figures concerning the reduction in kwh. consumption.

### Manufacturer Of 'Sani-Cold' Refrigerator

No. 3229 (Dealer, Dayton, Ohio)—"Wire collect name and address of manufacturer of the Sani-Cold refrigerator."

Answer: Heinz & Munschauer, 20 Superior St., Buffalo, N. Y., makes Sani-Cold refrigerators.

### Midget Refrigerator For A Hotel Bathroom

No. 3230 (Reader, Tennessee)—"Could you inform me if there is a midget electric refrigerator which could be used where there is a limited space, such as a hotel bathroom?"

"It seems to me I have read of such a one. The smallest one I have been able to find out about is the Lift-Top, made by General Electric, and that is too large."

Answer: On page 3 of the March 23 issue of AIR CONDITIONING & REFRIGERATION NEWS was illustrated the smallest type of refrigerator that is made today. This type of refrigerator is made by the following companies: Crosley Radio Corp., 1329 Arlington St., Cincinnati, Ohio. Frigidaire Div., General Motors Corp., Dayton, Ohio. General Electric Co., Nela Park, Cleveland, Ohio. Kelvinator Div., Nash-Kelvinator Corp., 14250 Plymouth Rd., Detroit, Mich. Leonard Div., Nash-Kelvinator Corp., 14260 Plymouth Rd., Detroit, Mich. Norge Div., Borg-Warner Corp., 670 E. Woodbridge St., Detroit, Mich. Westinghouse Electric & Mfg. Co., 246 E. Fourth St., Mansfield, Ohio.

# Engineering

## Reductions In Weight, Size, & Price Mark Progress Of Comfort Cooling Machinery

CHICAGO—Reduction of weight, space utilized, and cost of refrigeration machinery, made possible by welding, better refrigerants, and pressure lubrication of high-speed machines, marks the progress of the air-conditioning industry up to the present time, according to Arnold H. Goetz, president, Kroeschell Engineering Co., Westinghouse distributor.

Using the year 1908 as a factor of 100%, Mr. Goetz points out that space requirements for an air-conditioning compressor have dropped to 14% of what they were 30 years ago, while weight per ton has been reduced to 16% of the former total over the same period of years.

"For the air-conditioning industry to have reached its present high degree of development, many factors have contributed, including new refrigerants for increased safety and efficiency; mechanical advancements, reduced noise and vibration, maintenance, and electrical achievements decreasing first cost and operating expense.

### EARLY DESIGN

"The application of mechanical refrigeration for cooling of air for human comfort was started about 30 years ago. As it was most practical to use direct-expansion coils for cooling the air, it was necessary that the refrigeration system employ a safe gas and, for this reason, the

carbon dioxide refrigeration machine was, until a few years ago, most generally used for air cooling.

"The best valve design and materials 30 years ago necessitated that compressors be operated at very low speeds, a 37-ton machine operating at approximately 70 r.p.m. and a 111-ton machine at approximately 65 r.p.m. This resulted in very large and bulky machines.

### HIGH PRESSURES A FACTOR

"As pressures of 1,000 to 1,200 lbs. are required for the liquefaction of carbon dioxide, it was necessary to resort to very heavy construction. Due to the low speeds, the compressor had to be provided with a heavy flywheel, and a motor operating at 600 r.p.m.

"At this time, double-pipe condensers were commonly used. Welding was not in use, so heavy semi-steel fittings were required for the condensers and other parts of equipment, resulting in great bulk and weight.

"Development of the plate-type valve permitted compressors to be operated at about twice their former speed, reducing dimensions and weight. While changes and improvements permitted more compact compressor design, the condensers still required considerable space.

"About 10 years ago, the vertical compressor was developed for carbon dioxide, allowing the compressor to

be operated at an increase in speed. The application of welding made practical the use of shell-and-tube condensers, which brought about a saving in weight and space requirements.

"Modern lubrication reduced the amount of attention required by the machinery, and effected a saving in maintenance costs.

"The carbonic machine, used for air cooling, did not lend itself to automatic control because of high pressures utilized. All air-conditioning installations were under manual control.

### A NEW ERA

"About eight years ago, Freon was introduced as a refrigerant. It is a safe refrigerant, suitable for direct expansion air-cooling systems, and has the advantage of liquefying at low pressures. Freon has, therefore, opened the door for the development of refrigeration equipment used for air conditioning.

"The fact that Freon machines operate at low pressures permits lighter construction, allowing more compact equipment having less weight, which may be operated by automatic controls.

"Today machines are high speed to achieve compactness. Modern valve design, careful balancing of parts, and forced-feed lubrication permit condensing units to operate at high speed with practically no vibration or noise."

## New 'Hydraulic Action' Controls Announced

ST. LOUIS, Mo.—A new series of "hydraulic action" controls for use in refrigeration, heating, and air conditioning has been announced by the White-Rodgers Electric Co. here.

Each control is equipped with a liquid line, filled with what is termed by the company a "solid liquid charge" of a special fluid. This fluid actuates a diaphragm which makes or breaks an electric contact.

Upon slight increase in temperature, the liquid expands, acting directly on the diaphragm, causing it to move. This "hydraulic" action is said to be capable of exerting pressures of up to 750 lbs. per inch.

The company builds thermostats, warm-air limit controls, fan and blower controls, industrial oven controls, and industrial refrigeration controls.

The hydraulic principle used on the refrigeration controls is said to be especially applicable to industrial refrigeration, where remote control is desirable, since the accuracy of the control is not affected by extreme variations in temperature between the thermal elements and the control case. The controls operate on line voltage on a 2° differential.

## Paper Analyzes Problems In Vibration Control

LONG ISLAND CITY, N. Y.—Reprints of a paper on vibration control presented by the president of the Korfund Co., Inc., specialists in vibration control at the recent ninth National Oil and Gas Power meeting, are available upon application to the Korfund Co., Inc., of this city.

The paper, which is complete with illustrations, covers the subject of vibration, both as to theory and practice, defining each element in its relation to the problem as a whole.

After establishing a clear and correct conception of the problem presented by vibration of machinery, the text proceeds to explain practical solutions for various vibration loss conditions. Numerous isolating materials and devices are analyzed from the standpoint of relative advantages.

## Niagara-Hudson Extends Rural Lines 800 Miles

ALBANY, N. Y.—Niagara Hudson Power Corp. has just announced a construction program that includes 800 miles of new rural electric lines which, when added to the 13,800 miles of rural lines already operated, will make the system 93% electrified.

A. H. Schoellkopf, Niagara Hudson president, said the companies in the system had completed 4,066 miles of rural electric lines in the past three years, and at the end of 1937 were serving 40,318 farms and approximately 142,500 non-farm customers in rural communities.

## Dr. Philipp Explains Why Present-Day Refrigerators Operate At Lower Cost

DETROIT—Speaking before a meeting of the Detroit Section of the American Society of Refrigerating Engineers held at the offices of AIR CONDITIONING & REFRIGERATION NEWS last week, Dr. L. A. Philipp, factory manager of Kelvinator Div., Nash-Kelvinator Corp., presented constructive data pertaining to the progress in household refrigeration in the last 10 years, and showed how first and operating costs had been reduced.

Reduction in first and operating cost, said Dr. Philipp, was largely a result of an effect of competitive sales efforts. Demanding refrigerators with lower selling prices, lower operating cost and improved performance, sales executives placed a not too small burden upon the engineering and manufacturing departments—the problem of perfecting and manufacturing better, lower operating cost refrigerators at lower selling prices.

### COMPARISON OF COSTS

Comparing the purchase and operating cost of refrigerators manufactured from 1928 through 1938, Dr. Philipp pointed out that a typical 6-cu. ft. refrigerator sold for \$334.00 in 1928 and a refrigerator of equal capacity now sells for \$169.00, approximately half as much.

Operating costs of 6-cu. ft. refrigerators produced during the years 1932, 1934, 1936, and 1938 were \$1.95, \$1.65, \$1.15, and 65 cents per month respectively.

### FOUR FACTORS

This marked reduction in operating cost, declared Dr. Philipp, is a result of (1) thicker insulation; (2) improved breaker strips; (3) outer wrapping on insulation, and (4) improved evaporator and compressor design.

More attention has been given to the increase in thickness than to the improvement in quality in insulating materials used in refrigerator walls, said Dr. Philipp. Up to about three

years ago cabinet designers provided approximately 2 inches of insulation in quality refrigerators. Since that time the insulation has been increased from 3 1/4 to 3 1/2 inches in thickness.

Providing an air-tight wrapper around the outside of the insulation has resulted in a noted decrease in the infiltration of air. The wrapper also prevents moisture from entering and reducing the heat retarding value of the insulator.

### CONSTRUCTION ADVANCES

Inside of the insulation is not sealed. Reason advanced is that sealing the inside allows infiltrated air to diffuse, hence causing the insulation to become moist. With the inside of the insulation open, the dehydrating effect of the evaporator keeps the insulation material in a dry state, claimed Dr. Philipp.

Earlier cabinet design provided a metal inner door and outer door panel, the door being separated from the cabinet by a composition gasket. The metal inner door panel allowed for rapid condensation of heat from the interior to the exterior.

Substitution of non-metallic breaker strips for the former metal construction along with other design improvements resulted in a 26% decrease in heat leakage, explained Dr. Philipp.

### IMPROVED EVAPORATOR

A similar increase in efficiency has resulted from improved evaporator design. Dr. Philipp said that most manufacturers are now using flooded evaporators, which with maximum exterior surface and proper location have increased efficiency as much as 26% over previously used designs.

Improved compressor designs which make possible the use of smaller motors also provide an important step in the progress and development of household refrigeration systems over the first 10 years, concluded Dr. Philipp.

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The new

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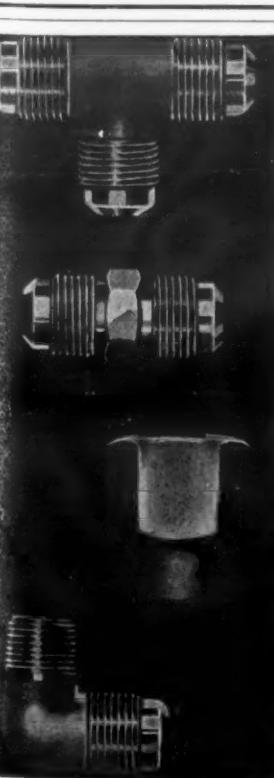
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